

## Physical Discipline and Behavior Problems in African American, European American, and Hispanic Children: Emotional Support as a Moderator

*Using data collected over a 6-year period on a sample of 1,039 European American children, 550 African American children, and 401 Hispanic children from the children of the National Longitudinal Survey of Youth, this study assessed whether maternal emotional support of the child moderates the relation between spanking and behavior problems. Children were 4–5 years of age in the first of 4 waves of data used (1988, 1990, 1992, 1994). At each wave, mothers reported their use of spanking and rated their children's behavior problems. Maternal emotional support of the child was based on interviewer observations conducted as part of the Home Observation for Measurement of the Environment. For each of the 3 racial-ethnic groups, spanking predicted an increase in the level of problem behavior over time, controlling for income-needs ratio and maternal emotional support. Maternal emotional support moderated the link between spanking and problem behavior. Spanking was associated with an increase in behavior problems over time in the context of low levels of emotional support, but not in the context of high levels of emotional support. This pattern held for all 3 racial-ethnic groups.*

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Surveys indicate that the majority of American parents endorse corporal punishment as a child-rearing practice and use it to discipline their children (Day, Peterson, & McCracken, 1998; Gils-Sims, Straus, & Sugarman, 1995; Straus & Gelles, 1986). Corporal punishment varies in intensity from spanking, typically defined as striking the child on the buttocks or extremities with an open hand without inflicting physical injury, to physical abuse, consisting of beatings and other forms of extreme physical force that inflict bodily injury. Whereas spanking falls within the normative range of socialization practices within the United States, physical abuse does not (Baumrind, 1997). Several studies have found that parental use of physical discipline is positively related to behavioral (e.g., aggression) and psychological (e.g., dysphoria, low self-esteem) problems in children and adolescents, but these relations are markedly stronger in samples of clinically aggressive children (where frequency and intensity of physical discipline tend to be higher than in nonclinical samples) and samples of children who have been physically abused (Dodge, Pettit, Bates, & Valente, 1995; Loeber & Stouthamer-Loeber, 1986; Strassberg, Dodge, Pettit, & Bates, 1994; Straus, Sugarman, & Gils-Sims, 1997).

Given its high prevalence in the United States, it is clear that physical discipline short of physical abuse occurs within the context of a diversity of parenting styles and behaviors. Consequently, ad-

equate assessment of the effects of physical discipline on children's development may require taking into account the broader parenting context within which physical discipline occurs. For example, studies indicate that physical discipline is unrelated to children's socioemotional functioning (e.g., aggression, delinquency, self-esteem) once dimensions of parenting associated with physical discipline (e.g., parental rejection, low parental involvement) are taken into account (e.g., Larzelere, Klein, Schumm, & Alibrando, 1989; Rohner, Bourque, & Elordi, 1996; Simons, Johnson, & Conger, 1994). On the assumption that the affective quality of parent-child relations is an important marker of parenting context, the present study seeks to determine if the relation between physical discipline and behavior problems is conditional on the level of warmth and support mothers exhibit toward the child. We hypothesized that the relation between physical punishment and behavior problems would be intensified in the context of low levels of maternal support but attenuated in the context of high levels of maternal support.

The notion that the effects of physical discipline depend on when and why parents use physical discipline as well as on the affective context within which physical discipline occurs has many proponents, but direct empirical tests of these hypothesized moderation effects are surprisingly thin. Based on his synthesis of findings across studies published in peer-reviewed journals, Larzelere (1996) concluded that nonabusive or "customary" physical discipline by parents tends to be associated with positive or neutral outcomes in offspring when the parenting context is marked by high levels of positive parental involvement, a tendency to use physical discipline based on child-oriented rather than parent-oriented motives, consistent follow-through on disciplinary warnings, and absence of verbal putdowns and ridicule. However, Larzelere's conclusion about markers of the parenting context that moderate the effects of physical punishment is not outcome specific and is based on a small number of primarily retrospective studies with several methodological biases and weaknesses.

More recently, Deater-Deckard and Dodge (1997) tested the affective quality of parent-child relations as a moderator of the impact of physical punishment in their longitudinal sample of African American and European American families. They found that positive correlations between parents' use of harsh physical discipline when children were 5 years old and children's externalizing

behavior during kindergarten through sixth grade as reported by teachers were considerably lower among families characterized by high levels of parental warmth and positive affect, compared to families distinguished by low levels of parental warmth and positive affect. Although the moderation effect was not assessed in the conventional form of a physical discipline by parental warmth/positive affect interaction effect, Deater-Deckard and Dodge's analysis represents a strong test of the moderation hypothesis because it is based on prospective data and uses a reliable measure of observed parent-child warmth and multiple indicators of parental physical discipline. Extrapolating from this finding, Deater-Deckard and Dodge speculated that differences in the parenting context (e.g., prevalence and acceptability of physical punishment and parenting behaviors attendant to this form of discipline) may account for evidence that parents' use of physical discipline is associated with externalizing behavior problems among European American children but not among African American children. This race by physical punishment interaction was found when the measure of externalizing behavior problems was based on ratings from teachers and peers, but not when it was based on maternal ratings (Deater-Deckard & Dodge, 1997; Deater-Deckard, Dodge, Bates, & Pettit, 1996).

McCord (1997) assessed parental warmth as a moderator of the effects of corporal punishment in her sample of impoverished, urban boys followed over a period of four decades, but her outcomes were criminality and violence in adulthood, rather than child externalizing behavior. Corporal punishment by fathers increased the likelihood of criminal behavior among sons, whereas corporal punishment by mothers increased rates of violence. Although maternal and paternal warmth reduced the probability that sons would commit serious crimes, it had no effect on violence, nor did it moderate the effects of corporal punishment. Rarer still are studies that examine the effects of the context of corporal punishment on children's cognitive development. Using longitudinal data from the Infant Health and Development Program, a randomized clinical trial of low-birth-weight infants, Smith and Brooks-Gunn (1997) found that preschool girls who experienced high levels of punishment (i.e., hitting and scolding) in the context of low maternal warmth had significantly lower IQ scores than those who experienced low levels of punishment and high maternal warmth. However, these two groups did not differ from the

low punishment/low warmth group or the high punishment/high warmth group.

Further evaluation of the moderation hypothesis is warranted in light of its prominence in the socialization literature and the fact that direct tests of the hypothesis are sparse and have yielded conflicting findings. Several features of the present study permit a relatively stringent test of emotional support and warmth as moderators of the relation between physical punishment and behavior problems: (a) we assess the relation between maternal physical discipline and *changes* in child behavior problems over time, (b) we directly test whether maternal emotional support significantly interacts with physical discipline in its impact on child behavior problems, (c) moderation effects are examined within three different racial-ethnic groups, and (d) moderation effects are estimated after introducing controls for important demographic variables such as gender and income-to-needs ratios.

## METHOD

### *Data and Sample*

Data were a subset of the children of the National Longitudinal Survey of Youth (NLSY), an expansion of the fifth cohort of National Longitudinal Surveys of Labor Market Experience. Of the 5,828 women who were originally sampled in 1979 as part of this survey, 3,053 were identified as having had children ( $n = 5,236$ ) by the 1988 round of surveys, which constitutes the base year of this study. These children make up the pool from which the analytic sample of this study is drawn. It should be noted that this sample is not a national representative sample of children.

Our analysis focuses on change in the Behavior Problems Index (BPI), which was administered in 1988, 1990, 1992, and 1994. This instrument can be used with children as young as 4 years old, so our sample selection criterion for this study was a child who was 4 in 1988. This decision gave us an analytic sample of the younger children of the NLSY sample, namely the 1,990 children who were 2–3 years old in 1986 (and hence were 4–5 years old in 1988 and 10–11 years old in 1994). The sample consists of 401 Hispanic, 550 African American, and 1,039 European American children. Roughly half of the children are girls (48% of the Hispanics, 52% of the African Americans, and 50% of the European Americans).

## *Measures*

*Behavior problems.* The BPI was developed by Peterson and Zill (1986) using items drawn from the Child Behavior Checklist and other behavior problem checklists. Maternal reports on items about the child's behavior (e.g., "Child clings too much to adults") comprise the full scale. Although this scale has classically been divided into subscales measuring internalizing and externalizing problems (the subscales are correlated at  $r = .70$ ), the full scale has better reliability (.86) and more interpretative clarity (Mott, 1998). Rather than argue for conceptual differences, we focus on the full scale to indicate level of behavior problems in total.

In order to use this scale in a longitudinal analysis, it has been modified so that the unit of analysis corresponds to each child's percentage on the total scale for each year. Growth curve modeling requires comparable measures across each time point so that change from one time to the next has meaning. Thus, it was necessary to adjust this composite measure so that the units had the same meaning across time. To do this, we formed the final outcome measure in three steps: (a) The total for each child for each year was calculated. (b) This total was divided by the total possible for each year's scale and then multiplied by 100. This computation establishes a position or "level" of behavior problems for each child in each year, which can then be compared across years. (c) We subtracted the average level for each racial-ethnic group in 1988 (base year) from every score. This third calculation translates every child's score so that it is "centered" at the group mean, giving each group the same starting point for comparison. This centering does not change the size of the metric, only the point of comparison.

*Spanking.* In 1988, interviewers noted whether or not the mother hit the child during the course of the home observation. In subsequent years, this observation was not made. However, in all years, the survey items included an open-ended question that asked the mother to report how many times she spanked the focal child in the past week. These questions make up the measure of spanking used to predict children's behavior problems. The data for 1988 generated a four-level ordinal scale of spanking. At the bottom of the scale (coded 0) are mothers who reported not spanking their child in the given week of 1988. At the next level (coded 1) are mothers who reported spanking their

child once. Neither of these groups had any mothers who were observed hitting their child during the interview. At the next level (coded 2) are mothers who reported spanking more than once but who were not observed hitting their child during the interview. At the top level (coded 3) are mothers who reported spanking more than once *and* were observed hitting their child during the interview. For each of the subsequent years (1990, 1992, 1994), amount of spanking reported is assessed as a three-level ordinal scale (i.e., *child not spanked*, *spanked once*, or *spanked more than once* during week).

The 1988 measure of spanking is used in our examination of spanking-related differences in problem behavior during the base year. However, to capture the impact of spanking on change in behavior problems over time, we use hierarchical linear modeling (HLM) techniques, with spanking as the outcome, to create two measures of the “spanking environment” of the child. One measure, the Bayesian estimate of the overall intercept, measures the *average* amount the child was spanked per week, experienced over 6 years. For example, one child might have been spanked an average of once a week, another four times a week, another not at all. The second measure, the Bayesian estimate of the slope, estimates the *change* in spanking experienced as the child aged. For example, if a child was spanked more at 4 years of age than at 10 years of age, this measure would be negative, whereas if a child was spanked more as he or she got older, this measure would be positive. If the amount of spanking stayed the same over 6 years, this measure would have a value of 0. These two measures are used as predictors in examining the change in behavior problems over the 6 years studied. This use of HLM to create child-level measures reduces the autocorrelation and error misestimation associated with simple averages. A full description of the method can be found in Bryk and Raudenbush (1992).

*Emotional support.* The measure of maternal emotional support is based on five items from the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1980). The HOME observations were conducted during interviewer visits in each year of the study. The items concern the amount of warmth and emotional support displayed toward the child by the mother over the course of the observation as assessed by the interviewer (e.g., mother caressed,

kissed, or hugged child during visit; conveyed positive feeling about child; answered child’s questions or requests verbally; encouraged child to contribute to the conversation). The scale was internally standardized by NLSY to be comparable across time as the child aged.

As was done with amount of spanking, the 1988 emotional support scale was used as a covariate for the baseline behavior problem level. In addition, we constructed (using HLM analysis with emotional support as the outcome) an estimate for each child of the overall average emotional support over the 6 years, and the change in support experienced by that child over the 6 years of the study. For example, one child pulled from the sample had a comparatively high overall level of emotional support over the 6 years (Average Support = 1.62 *SD*) and very little change over that time (Change = 0.02 *SD*). Another child had an average level of support across the 6 years (Average Support = 0.05 *SD*), but it dropped substantially over that time (Change = -1.2 *SD*).

*Controls.* Because of gender differences in behavior problems, gender is taken into account in all analyses. Similarly, although the sample cohort was initially selected within a limited age span, differences could still emerge related to age in months. Thus age (in months) was also controlled in all initial analyses. However, unlike gender, age was not a significant predictor in any analysis and was subsequently dropped from the final analyses.

Controls also were introduced for family income. We derived an income-to-needs ratio by dividing the family’s total income by the official poverty threshold for that year. (The poverty level for each child comes from NLSY and is drawn from the federal level declared for that year adjusted for family size.) This ratio estimates family income in a metric that takes poverty as its critical referent. For example, a ratio of 1 indicates that the family’s income is exactly at the poverty level for that year, whereas a ratio of 2 indicates that the family has income twice that of the poverty threshold. As was done with amount of spanking, the 1988 income-needs ratio was used as a covariate for the baseline behavior problem level. Similarly, to capture the family’s economic well-being over the 6-year period of the study, HLM was used to provide an estimate for both the average level of the income-to-needs ratio over this period and the change in income-to-needs ratio experienced by families during this time.

### Analytic Method

We analyzed these data in stages, building from simple bivariate comparisons to full multivariate analysis of change. We use one-way analysis of variance (ANOVA) to examine racial-ethnic differences in the BPI (item level and composite), environmental conditions, and controls. In these analyses, we have adjusted the significance level because of multiple tests, so that only those differences found at a significance level of  $p < .001$  are reported. In addition, we examine the unadjusted correlations among all measures used in the analyses to provide some sense of how these factors may be operating in tandem. It should be kept in mind, however, that these latter relations are not necessarily sustained in the multivariate context (precisely because of some of the multicollinearity involved between predictors).

The analyses of behavior problems are all done with growth curve analysis using HLM. This analytic method estimates a change function for each child by nesting individual measures within person. It then uses parameters of that change function—the “intercept” and “slope” of each child’s line—as a person-level outcome on which characteristics such as gender, spanking, family income, and emotional support can be explored. This type of two-level model is analytically appropriate for looking at nested data structures, such as this case of change in behavior over time nested within person. A more complete discussion of this analytic method can be found in Bryk and Raudenbush (1992). We provide only an overview here.

HLM examines variance within and between persons, similar to the way that repeated measures ANOVA does. However, it does this by running what amounts to a small regression equation for each person, of the form  $Y = \beta_0 + \beta_1(\text{Time}) + E$ . When the outcome of this regression is behavior,  $\beta_0$  estimates each individual child’s behavior level at Time 0 (1988), and  $\beta_1$  measures the change in that child’s behavior over time (from 1988 to 1994). These two parameters are conditionally related, in that each is adjusted for the other.

These two adjusted estimates about a child’s behavior are then lifted to the next level of the analysis to be the outcomes on which other child characteristics are predicted. For example, the HLM equation looking at individual differences in initial behavior would take the form:

$$\beta_0 = \gamma_{00} + \gamma_{01}(\text{Female}) \\ + \gamma_{02}(\text{Spanking in 1988}) + \text{etc.}$$

Similarly, the equation looking at change in behavior would take the form:

$$\beta_1 = \gamma_{10} + \gamma_{11}(\text{Female}) \\ + \gamma_{12}(\text{Average Level of Spanking}) \\ + \text{etc.}$$

Each parameter (termed *gamma* to distinguish from the betas in Level 1) provides an estimate of the effect of that variable. For example,  $\gamma_{01}$  provides an estimate for the difference in initial behavior problems between boys and girls, whereas  $\gamma_{11}$  estimates the gender difference in change in behavior over time. Using this method, we can examine individual differences related to *both* initial behavior ( $\beta_0$ ) and change in behavior over time ( $\beta_1$ ) without the problems of autocorrelation among common measures, which confounds most repeated measures analyses (for further discussion of this issue, see Collins & Horn, 1991).

A common way to address the causal direction difficulty is to predict an outcome by a measure preceding that outcome, for example, predicting child behavior problems in 1990 by spanking in 1988. We use a variant of this process, but the problem is more complicated because both behavior problems and spanking are changing over time. We address this problem using a lagged-change estimation process, in which the change functions for both behavior (described previously) and spanking are estimated over time, with the spanking change assessed at the time point prior to the behavior problem estimates. This strategy for examining cross-estimated change functions is described more completely in Duncan and Raudenbush (1999).

We conducted our analysis in two stages, designed first to identify the impact of spanking without controls, and second to examine the change in impact after controlling for environmental conditions (i.e., family income and maternal emotional support). In both stages, we examined results separately for Hispanic, African American, and European American subsamples.

## RESULTS

### Racial and Ethnic Differences

Table 1 shows comparisons for the critical predictor variables (spanking, poverty, and maternal warmth) for each year broken down by racial-ethnic group, with differences between groups tested

TABLE 1. RACIAL-ETHNIC DIFFERENCES IN SPANKING, INCOME-NEEDS RATIO AND MATERNAL EMOTIONAL SUPPORT OVER THE 6 YEARS STUDIED

Variable	Hispanic	African American	European American
1988 levels			
Amount spanked ( <i>M</i> )	.69 <sub>a</sub>	.91 <sub>b</sub>	.65 <sub>a</sub>
Percentage not spanked	48 <sub>a</sub>	36 <sub>b</sub>	49 <sub>a</sub>
Percentage spanked once last week, not observed hit	24	26	28
Percentage spanked more than once last week, not observed hit	19 <sub>a</sub>	27 <sub>b</sub>	14 <sub>a</sub>
Percentage spanked more than once last week, observed hit	10	11	10
Family income-needs ratio ( <i>M</i> )	1.74 <sub>a</sub>	1.48 <sub>b</sub>	2.18 <sub>c</sub>
Maternal emotional support scale ( <i>M</i> )	87.5 <sub>a</sub>	76.6 <sub>b</sub>	90.3 <sub>a</sub>
1988–1994 average levels			
Amount of spanking per week ( <i>M</i> )	.58 <sub>a</sub>	.97 <sub>b</sub>	.50 <sub>a</sub>
Family income-needs ratio ( <i>M</i> )	1.96 <sub>a</sub>	1.49 <sub>b</sub>	2.37 <sub>c</sub>
Maternal emotional support scale ( <i>M</i> )	103.6 <sub>a</sub>	93.1 <sub>b</sub>	107.7 <sub>a</sub>
1988–1994 change in levels			
Change in spanking ( <i>M</i> )	-.12 <sub>a</sub>	-.25 <sub>b</sub>	-.09 <sub>a</sub>
Percentage whose amount of spanking declined	24 <sub>a</sub>	41 <sub>b</sub>	17 <sub>c</sub>
Percentage whose amount of spanking increased	24 <sub>a</sub>	18 <sub>a</sub>	44 <sub>b</sub>
Percentage whose amount did not change	52 <sub>a</sub>	41 <sub>b</sub>	39 <sub>b</sub>
Change in family income-needs ratio ( <i>M</i> )	.17 <sub>a</sub>	-.05 <sub>b</sub>	.16 <sub>a</sub>
Percentage who stayed in poverty	23 <sub>a</sub>	35 <sub>b</sub>	10 <sub>c</sub>
Percentage who dropped into poverty	9 <sub>a</sub>	11 <sub>a</sub>	5 <sub>b</sub>
Percentage who rose out of poverty	13 <sub>a</sub>	12 <sub>a</sub>	7 <sub>b</sub>
Percentage never in poverty	55 <sub>a</sub>	42 <sub>b</sub>	78 <sub>c</sub>
Change in maternal emotional support scale ( <i>M</i> )	14.1	15.5	13.6
Percentage whose support decreased	23	22	18
Percentage whose support increased	47	48	51
Percentage whose support stayed constant	30	30	31

Note: Values with unique subscripts are significantly different,  $p < .001$ .

by one-way ANOVA (for continuous variables) and contingency table analysis (for categorical variables). In 1988, fewer African American children were “never hit” and more were spanked more than once a week than European American or Hispanic children. Interestingly, whereas European American mothers increased their amount of spanking from 1988 to 1994 (44% reported an increase), more African American children experienced a decline in spanking over the 6 years (41%), and only 18% experienced an increase. Hispanic children experienced change as well, but the same portion experienced a drop in spanking as experienced an increase (24%).

In addition, in 1988, African Americans had a lower family income-needs ratio and lower levels of emotional support than did Hispanics or European Americans. Hispanics had a lower average income-needs ratio than European Americans, but Hispanics were similar to European Americans in levels of emotional support. Similar patterns are present for the average levels estimated from 1988–1994. In general, environmental advantage appears more concentrated among European

American families, even though the original sampling of the NLSY targeted disadvantaged women of each racial-ethnic group.

#### *Bivariate Relationships Among Covariates and Outcomes*

Table 2 shows a correlation matrix that relates each measure examined in the HLM analyses. These comparisons allow one to consider a variety of relations between covariates used in these analyses. For example, the relation between spanking level and emotional support in 1988 was moderately negative ( $r = -.23$ ), whereas the relation between income-needs ratio and emotional support in 1988 was moderately positive ( $r = .29$ ). In general, relations among variables support those reported in other studies concerning covariates of spanking and behavior.

#### *Net Impact of Spanking on Change in Behavior Problems*

Table 3 shows the results of the first stage of HLM analyses, examining the impact of spanking on

TABLE 2. CORRELATIONS AMONG VARIABLES WITHIN POOLED SAMPLE

	Child's Age	Amount of Spanking 1988	Change in Spanking 1988-1994	Income-Needs Ratio 1988	Change in Income-Needs 1988-1994	Emotional Support 1988	Change in Emotional Support 1988-1994	Behavior Problems 1988	Change in Behavior Problems 1988-1994
Female	-.03	-.06**	.004	-.0003	.002	.07**	-.01	-.11***	.02
Child's age	1.00	-.05**	.01	-.03	-.02	.24***	-.13***	.03	-.04
Amount of spanking 1988		1.00	-.23***	-.10***	-.09***	-.23***	.09***	.46***	-.06*
Change in spanking 1988-1994			1.00	-.01	-.01	.01	-.06*	-.005	.09**
Income-needs ratio 1988				1.00	-.15***	.29***	-.05	-.14***	-.02
Change in income-needs ratio 1988-1994					1.00	.02	.07**	-.07**	.01
Emotional support 1988						1.00	-.50***	-.18***	-.02
Change in emotional support 1988-1994							1.00	.01	-.09***
Behavior problems 1988								1.00	-.33***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

change in behavior over time after taking only gender into account. These analyses were conducted independently on the Hispanic, African American, and European American subsamples, as well as on the pooled sample. As described in the Method section, the numbers in this table are the gamma estimates of the impact of these child-level predictors on the initial level of behavior problems ( $\beta_0$ ), shown in the first half of the table, and the change in behavior over time ( $\beta_1$ ), shown in the second half of the table. Because a value of 0 in our converted construction of the BPI corresponds to the group mean, the negative intercept for this table indicates that the comparison group (male, not hit) is slightly below the overall group mean for 1988.

The first part of Table 3 shows that the amount that a child was hit or spanked in 1988 is unrelated to the level of behavior problems reported in 1988, after taking into account (a) the overall level of behavior problems over time and (b) gender ( $\gamma = -.08$  for Hispanics,  $.02$  for African Americans, and  $.01$  for European Americans). This result differs substantially from the correlation shown in Table 2 ( $r = .46$ ) and points out the critical need to examine relations that change over time in a way that appropriately apportions the within- and between-persons variance. This result should be interpreted as a lack of relationship between spanking and initial level of problems, relative to the overall level per person. In other words, when one looks at the 1988 level of behavior problems in the context of an individual person's starting point, the amount that person was spanked at the time is unrelated to comparatively high or low levels. There are some comparatively low-problem-level children who are getting hit fairly often and some high-problem-level children who are not getting hit. In this baseline comparison, only gender makes a significant difference, with parents reporting lower levels of problem behavior for girls compared to boys.

However, being spanked clearly increases the level of problem behavior over time. The second part of Table 3 shows that all groups had an increase in behavior problems over the 6-year period ( $\gamma = 1.35$  for Hispanics,  $1.27$  for African Americans, and  $1.54$  for European Americans). These gains did not differ by gender. However, children who experienced more spanking during this time period had a larger increase in behavior problems ( $\gamma = 1.97$  more for Hispanics,  $1.55$  for African Americans, and  $1.97$  for European Americans). This effect was estimated independently

TABLE 3. HIERARCHICAL LINEAR MODEL RESULTS ON THE NET IMPACT OF BEING HIT ON CHANGE IN BEHAVIOR PROBLEMS FOR EACH RACIAL-ETHNIC GROUP

	Hispanic	African American	European American	Pooled Sample
Average behavior problem level, 1988	-.65	-.38	-.78	-.59
Female	-3.17 <sup>a</sup>	-2.83 <sup>a</sup>	-2.37 <sup>a</sup>	-2.71 <sup>b</sup>
Amount hit in 1988	-.08	.02	.01	.01
Average change in behavior problems, 1988-1994	1.35 <sup>a</sup>	1.27 <sup>a</sup>	1.54 <sup>a</sup>	1.40 <sup>b</sup>
Female	.32	.60	-.09	.26
Average level of spanking, 1988-1994	1.97 <sup>a</sup>	1.55 <sup>a</sup>	1.97 <sup>a</sup>	1.80 <sup>b</sup>
Change in level of spanking, 1988-1994	1.14 <sup>a</sup>	.98 <sup>a</sup>	.98 <sup>a</sup>	1.01 <sup>b</sup>

<sup>a</sup>Significant effect within racial-ethnic group,  $p < .001$ . <sup>b</sup>Significant effect within pooled sample,  $p < .001$ .

from the impact of changing the amount of spanking, which was also a factor. Children who experienced an increase in spanking also had greater increases in behavior problems ( $\gamma = 1.14$  for Hispanics, 0.98 for African Americans, and 0.98 for European Americans). Because these effects are additive, the most “at-risk” child (according to this analysis) would be one who had both high levels of spanking and experienced an increase in spanking from 1988 to 1994. Using the pooled sample estimates, the average change in behavior problems for such a child would be 1.40 (the base change) plus 1.80 (the effect for higher level of spanking) plus 1.01 (the effect for the spanking increase), or an increase of 4.21 per year. Given that the overall standard deviation on this index is 8.71, this increase represents a change of about half a standard deviation every year.

Figure 1 shows a graphic representation of these results, drawn from the results in Table 3. We highlight the effects by focusing on two subsamples from the full analysis. The first panel in Figure 1 represents the estimated impact of the amount of spanking on change in behavior problems, focusing on the subsample of children for whom spanking remained constant over the 6-year period (about 42% of the overall sample). This panel shows that, whereas all parents report some increase in level of behavior problems over this period, those children who experience higher levels of spanking on a weekly basis have a much greater increase over time.

The second panel in Figure 1 shows the estimated impact of change in the amount of spanking experienced by children over 6 years, this time using the subsample of children who were

FIGURE 1. IMPACT OF AMOUNT AND CHANGE IN SPANKING ON CHANGE IN BEHAVIOR PROBLEMS FROM 1988 TO 1994 FOR POOLED SAMPLE OF CHILDREN

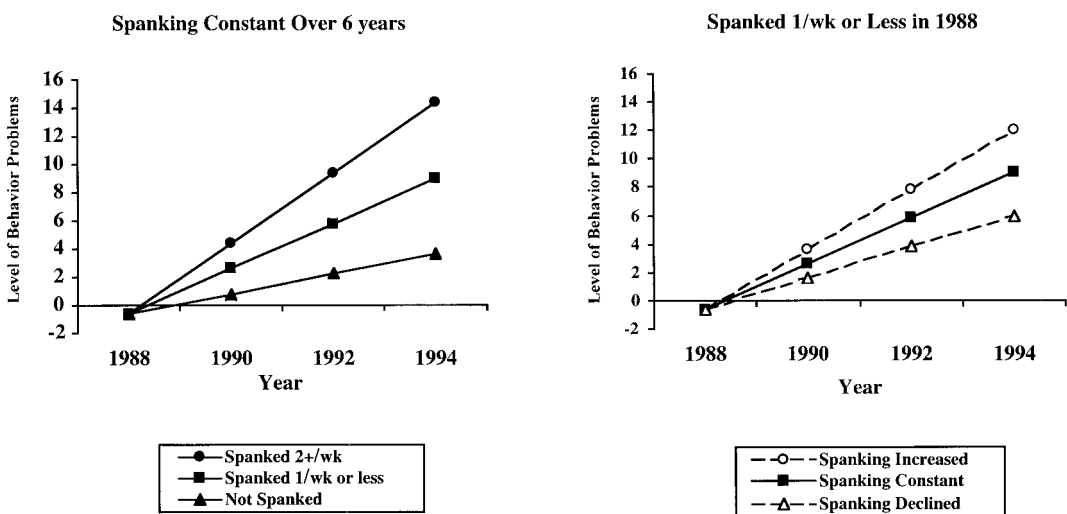




TABLE 4. HIERARCHICAL LINEAR MODEL RESULTS ON THE PREDICTORS OF GROWTH DIFFERENCES IN BEHAVIOR PROBLEMS OVER TIME FOR EACH RACIAL-ETHNIC GROUP

	Hispanic	African American	European American	Pooled Sample
Average behavior problem level, 1988	.05	-.75	.02	-.05
Female	-1.99 <sup>a</sup>	-1.65 <sup>a</sup>	-1.43 <sup>a</sup>	-1.63 <sup>b</sup>
Amount hit in 1988	.26	.28	.20	.25
Income-needs ratio in 1988 <sup>c</sup>	-.82 <sup>a</sup>	-.14 <sup>a</sup>	-.71 <sup>a</sup>	-.67 <sup>b</sup>
Level of emotional support in 1988 <sup>d</sup>	-2.61 <sup>a</sup>	-4.71 <sup>a</sup>	-4.69 <sup>a</sup>	-4.02 <sup>b</sup>
Average change in behavior problems, 1988–1994	2.25 <sup>a</sup>	2.03 <sup>a</sup>	2.19 <sup>a</sup>	2.11 <sup>b</sup>
Female	.08	.48 <sup>a</sup>	-.12	.16
Average level of spanking, 1988–1994	.85 <sup>a</sup>	.72 <sup>a</sup>	.90 <sup>a</sup>	.82 <sup>b</sup>
Change in level of spanking, 1988–1994	.62 <sup>a</sup>	.54 <sup>a</sup>	.57 <sup>a</sup>	.57 <sup>b</sup>
Income-needs ratio, 1988–1994 <sup>a</sup>	-.09	.04	-.06	-.03
Change in income-needs ratio, 1988–1994	-.75 <sup>a</sup>	-.62 <sup>a</sup>	-.65 <sup>a</sup>	-.66 <sup>b</sup>
Level of emotional support, 1988–1994 <sup>d</sup>	-1.25 <sup>a</sup>	-1.19 <sup>a</sup>	-.26	-.83 <sup>b</sup>
Change in emotional support, 1988–1994	-.65 <sup>a</sup>	-.69 <sup>a</sup>	-.66 <sup>a</sup>	-.67 <sup>b</sup>
Interaction between emotional support and level of spanking, 1988–1994	-.62 <sup>a</sup>	-.68 <sup>a</sup>	-.35 <sup>a</sup>	-.54 <sup>b</sup>

<sup>a</sup>Significant effect within racial-ethnic group,  $p < .001$ . <sup>b</sup>Significant effect within pooled sample,  $p < .001$ . <sup>c</sup>This measure is in original metric, where 1 = income exactly at poverty level but has been centered to the sample mean. Thus, 0 indicates the average income-needs ratio for that sample, and 1 unit above 0 corresponds to an increase in income above the sample mean of the amount of designated poverty level. <sup>d</sup>This measure was z-scored to the sample mean and standard deviation.

spanked once a week or less in 1988 (about 25% of the overall sample). Note that the middle line in both panels is the same group. The comparison in the second panel shows that, in addition to the increase in behavior problems experienced by all children at this level, there is added an impact on behavior problems related to change in amount of spanking. Compared to children for whom spanking remained constant over the 6-year period, children who experienced a decrease in amount of spanking over time have a smaller increase in behavior problems, whereas those who experienced an increase in amount of spanking have a greater increase in behavior problems.

Three critical conclusions can be drawn from these results. First, children who experience more spanking on average have a greater increase in behavior problems over time. Second, when the amount of spanking experienced decreases as the child ages, the impact on the growth of behavior problems is blunted, whereas an increasing amount of spanking appears to accelerate the growth of behavior problems. Finally, when looking at the net impact of spanking on the development of behavior problems, there are no differences related to race-ethnicity. The impact is the same across all groups.

#### *Combined Effects of Spanking and Home Environment on Behavior Problems*

Table 4 shows all of the main effects explored in the HLM analysis separately for each racial-ethnic

group—namely, those of being spanked, the income-needs ratio for the relevant years, and the level of emotional support in each relevant year. Each column is a separate and independent sample, and the main-effects HLM model is run identically on each racial-ethnic group, as well as on the pooled sample. Hence, it is appropriate to compare effects within groups as well as to examine between-group differences in both the basic curve and the factors influencing change for each group. We discuss each set of findings separately, although all are analyzed simultaneously. We explored the possibility that each of the home environment measures might interact with one or more of the spanking measures. However, only one interaction—that between the average level of emotional support and the average amount of spanking from 1988 to 1994—was significant. This is the only interaction left in the final model. It is discussed in the section concerning the impact of emotional supportiveness.

*Adjusted impact of spanking on change in behavior problems.* Because the behavior composite was centered to each group's 1988 mean, the intercept in this main-effect model can be interpreted as the average deviation from the group mean in 1988 behavior problems observed for male children who reportedly were not hit in 1988 and have an average 1988 income-needs ratio and level of emotional support. Of the three groups, African American children have the lowest adjusted

level of behavior problems, followed by Hispanics and then European Americans, although the difference between the latter two groups is not significant. In addition, although the overall change in behavior problems is an average increase for each racial-ethnic group, the change is slightly lower for African American children. In other words, after adjusting for spanking, income-needs ratio, and level of emotional support, African American children have a lower average level of behavior problems and a smaller increase over time.

The effect of spanking is fairly consistent across racial-ethnic groups. Once again, we observe no difference in behavior problems in 1988 comparing children who were and were not hit or spanked. In addition, the patterns observed concerning the impact of amount and change in spanking over the 6-year period are the same as observed previously, though slightly attenuated by the other factors considered in the model. Notably, this relation continues to show no differences related to racial-ethnic background. In short, even after one takes into account relative poverty and emotional support, spanking has a similar impact on the development of behavior problems over time, regardless of a child's racial-ethnic background.

*Income-needs ratio.* As shown in Table 4, for both European American and Hispanic children there is a strong relation between the income level of the family and the level of reported behavior problems of the child during the base year, with mothers of children living in more affluent families reporting lower levels of child behavior problems. There is an association between income level and behavior problems for African American children, as well, but it is not nearly as large. Interestingly, once this initial impact is in place, the average level of a family's income-needs ratio over the period from 1988 to 1994 does not make a difference in the *change* in behavior problems over that time. This result suggests that the impact on behavior is largely constant—children who are lower in problem behavior in 1988 maintain that level compared to children who are higher. This observation holds only for those families whose income remained essentially constant.

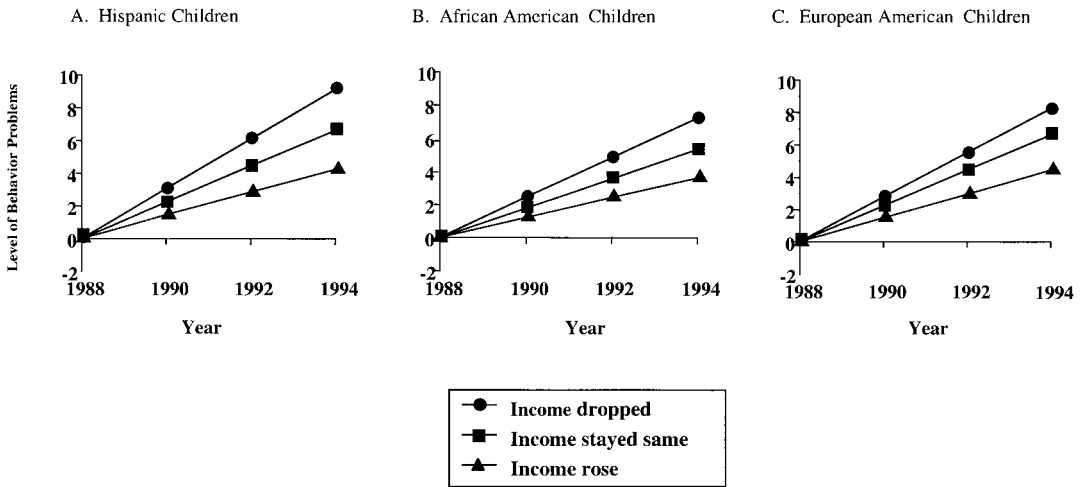
On the other hand, children who experienced a drop in income-needs ratio in their family showed a corresponding rise in level of problem behavior, and vice versa. To illustrate this relation, we focus on children who were not spanked

throughout the 6-year period, and compare the change in behavior problems for those who started at their sample's average income-need ratio and dropped to those who started at the average and rose. These patterns are shown for each racial-ethnic group in Figure 2. In general, change in income level is related to a change in behavior problems, after taking spanking and emotional support into account. The overall impact is slightly smaller for African American children than for either Hispanic or European American children.

*Maternal emotional support.* There are several important observations to be made about the results concerning the impact of emotional support on behavior problems. When considering the cross-sectional results from 1988 (base year), there is a negative relation between support and behavior problems. As shown in Table 4, children who receive more emotional support from their mothers have fewer reported problems. This relation is stronger for African American and European American children ( $\gamma = -4.71$  and  $-4.69$ , respectively) than it is for Hispanic children ( $\gamma = -2.61$ ). In addition, for two of the groups, there is a benefit gained by emotional supportiveness on the development of behavior problems over time. Unlike what was observed with family income, supportiveness has additional impact on the change in African American and Hispanic children's behavior, contributing to a smaller increase over time ( $\gamma = -1.19$  and  $-1.25$ , respectively). This relation is not observed for European American children, however ( $\gamma = -.26$ ). Similarly, when emotional support increases, it has a buffering effect on the development of problems, whereas a drop in support has an additional impact by increasing the level of behavior problems over these years. This result is consistent across the three racial-ethnic groups ( $\gamma = -.65$ ,  $-.69$ , and  $-.66$  for Hispanic, African American, and European American children, respectively) and suggests that adding emotional support to the family context is always beneficial, no matter the age of the child or the timing involved.

Finally, and most critical to this investigation, we found a significant interaction effect between emotional support and level of spanking over the 6-year period for each racial-ethnic group (Table 4). Consistent with prediction, emotional support moderated the impact of spanking. Figure 3 shows for each racial-ethnic group a comparison between children who were not spanked and those who were spanked more than once a week in low-sup-

FIGURE 2. EFFECT OF CHANGE IN FAMILY INCOME ON CHANGE IN CHILDREN'S LEVEL OF BEHAVIOR PROBLEMS OVER TIME



portive (1 or more *SDs* below average) and high-supportive (1 or more *SDs* above average) home environments. Among children with low levels of emotional support, both groups have a high level of problems, and those getting spanked have a greater increase in behavior problems. Although the pattern is the same for all three groups, the relation between spanking and increase in behavior problems is strongest for Hispanic children and weakest for European American children. Conversely, among children with high levels of emotional support, there is almost no relation between spanking and change in behavior problems over time.

In general, these results suggest strongly that, although spanking can have a negative impact on children's socioemotional functioning over time, this effect is moderated by the emotional context in which such spanking occurs. When spanking occurs in a context of strong overall emotional support for the child, it does not appear to contribute to a significant increase in behavior problems. However, without this support in place, behavior problems tend to increase in response to increases in spanking.

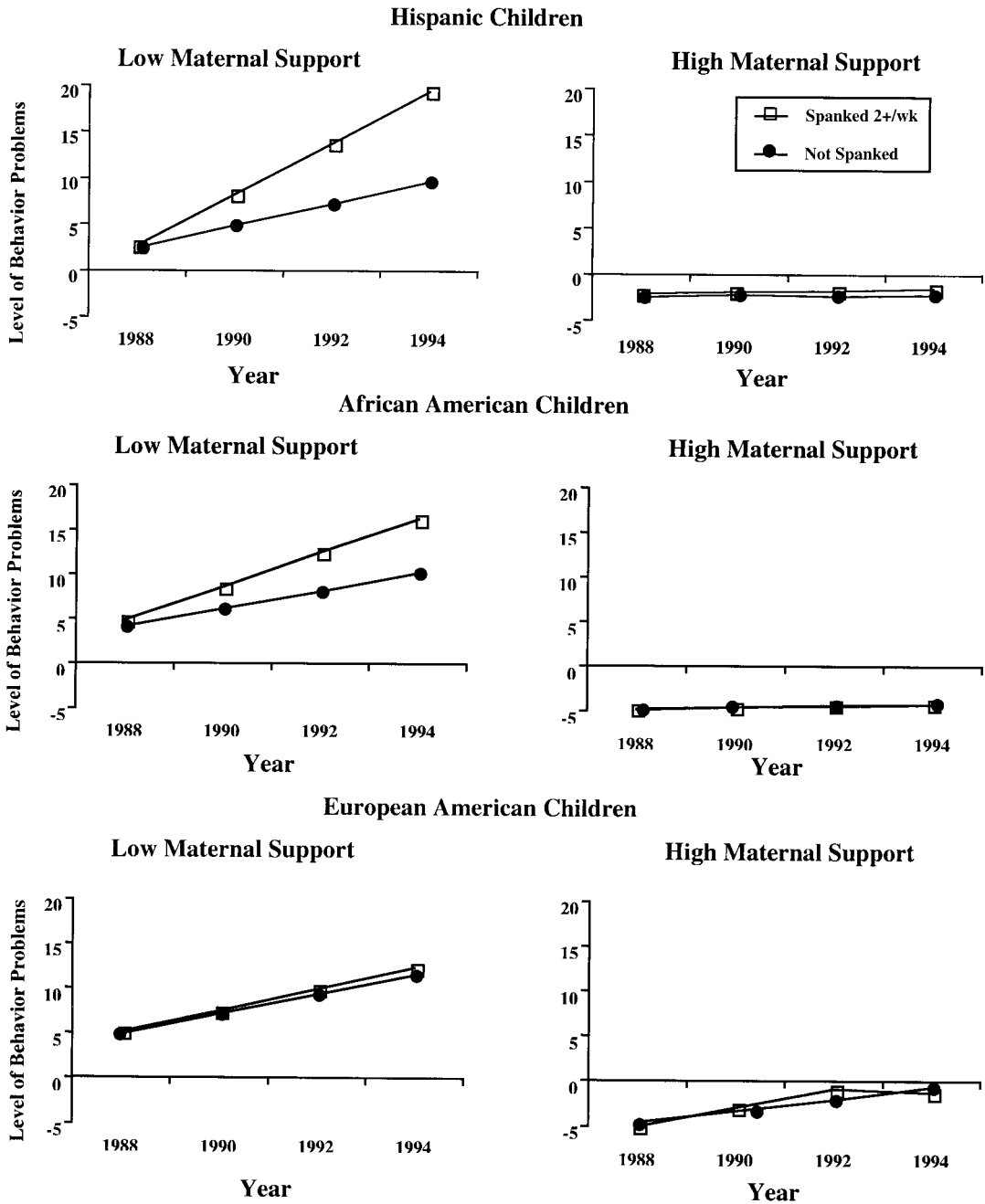
#### DISCUSSION

In keeping with a host of studies reporting negative associations between various forms of coercive control by parents and socioemotional adjustment in children (McCord, 1997; Rohner, Kean, & Cournoyer, 1991; Strassberg et al., 1994;

Straus et al., 1997), the present study found that spanking predicted increases in problem behavior over the 6-year period after controlling for gender, income-need ratio, and maternal emotional support. Although African American children as compared to European American and Hispanic children were more likely to be spanked and were spanked more frequently—a finding that concurs with earlier studies (Day et al., 1998; Deater-Deckard et al., 1996)—we found no evidence that the relation between spanking and behavior problems is related to race or ethnicity. In contrast to the present findings, some research indicates that spanking is predictive of externalizing problems among European American children, but not African American children (Deater-Deckard et al., 1996; Gunnoe & Mariner, 1997). Research is needed to determine if this pattern of conflicting findings is due to differences among studies in the source of information about the child's behavior problems (e.g., mothers, teachers, peers), in the measure of spanking, or in the extent to which analyses take account of the impact of children's externalizing behavior on mothers' tendency to spank (McLeod, Kruttschnitt, & Dornfeld, 1994).

The present findings indicate that the effects of spanking on problem behavior depend partly on whether spanking is administered in the context of high emotional support of the child. Our confidence in the reliability of this moderation effect is buttressed by the fact that it was replicated in separate analyses based on three different racial-

FIGURE 3. INTERACTION BETWEEN AMOUNT OF SPANKING AND HIGH AND LOW MATERNAL SUPPORT ON CHANGE IN BEHAVIOR PROBLEMS OVER TIME



ethnic groups. Emotional support may moderate the impact of spanking by influencing the child's interpretation of physical discipline. The child may be less likely to view spanking as harsh, un-

just, and indicative of parental rejection when relations with the parent are generally warm and supportive. Previous research indicates that the impact of physical punishment on children's psy-

chological adjustment is partly mediated through perceived parental rejection (Rohner et al., 1996; Rohner et al., 1991). It is also reasonable to assume that hostile attributional biases about the intentions of others—one of the psychological factors underlying aggressive behavior (Weiss, Dodge, Bates, & Pettit, 1992)—may also be less likely to develop when physical punishment is meted out in the context of positive parent-child relations. Notwithstanding the moderating effect of maternal warmth and emotional support, the findings of the present study do not negate some of the reasons cited by scholars for discouraging parental reliance on physical punishment. For example, as Simons et al. (1994) point out, when parents use physical punishment, there is always the possibility, however minuscule, that the encounter will escalate to the point that excessive force is used and the child is physically injured. Furthermore, physical punishment typically evokes anger and emotional distress in the child, which, over time, may diminish positive feelings.

Several limitations of the present study need to be acknowledged. First, our measure of child problem behavior is based on maternal report, and as such, it may not be a good indicator of problem behavior in the school setting or other settings beyond the home. Second, the fact that mothers were informants about both spanking and child problem behavior may have inflated the relation between these variables. Third, our measure of spanking does not incorporate information about intensity, timing, or contingencies of spanking. It is impossible to know whether “spanking” as administered by some parents constituted excessive physical force that falls outside the normative range of socialization practices. It may be that low maternal support covaries with more extreme forms of physical discipline not captured in our measure. In addition, our measure does not reflect the extent to which spanking episodes are or are not preceded by the use of reason to gain the child’s compliance (e.g., reasoning), a factor that may moderate the impact of reasoning and physical discipline alike (Larzelere, Sather, Schneider, Larson, & Pike, 1998). Finally, our measure of spanking is limited by the possibility that some parents who spanked their children regularly did not have the occasion to do so during the previous week and by the possibility that parents who typically did not use physical discipline spanked their children during the previous week (Day et al., 1998). It is likely that the first bias is balanced by the

second bias, but we cannot determine this with any certitude.

Longitudinal research that relies on multiple informants about child behavior problems and uses a variety of methodologies to capture reliable differences in the manner in which parents administer physical discipline would be especially valuable. We did not systematically explore differences in the antecedents of internalizing versus externalizing behavior, because these two domains of behavior were highly correlated. Nonetheless, this is potentially an important line of inquiry that may provide insight into some intriguing questions. As one example, the relative contribution of spanking to internalizing versus externalizing behavior may depend on the child’s temperament and degree of identification with the disciplining parent.

#### NOTE

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