

Children's perceptions of maternal hostility as a mediator of the link between discipline and children's adjustment in four countries

Jennifer E. Lansford,¹ Patrick S. Malone,² Kenneth A. Dodge,¹
Lei Chang,³ Nandita Chaudhary,⁴ Sombat Tapanya,⁵
Paul Oburu,⁶ and Kirby Deater-Deckard⁷

*International Journal of
Behavioral Development*
34(5) 452–461

© The Author(s) 2010
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0165025409354933
ijbd.sagepub.com



Abstract

Using data from 195 dyads of mothers and children (age range = 8–12 years; $M = 10.63$) in four countries (China, India, the Philippines, and Thailand), this study examined children's perceptions of maternal hostility as a mediator of the links between physical discipline and harsh verbal discipline and children's adjustment. Both physical discipline and harsh verbal discipline had direct effects on mothers' reports of children's anxiety and aggression; three of these four links were mediated by children's perceptions of maternal hostility. In contrast, there were no significant direct effects of physical discipline and harsh verbal discipline on children's reports of their own anxiety and aggression. Instead, both physical discipline and harsh verbal discipline had indirect effects on the outcomes through children's perceptions of maternal hostility. We identified a significant interaction between perceived normativeness and use of harsh verbal discipline on children's perception of maternal hostility, but children's perception of the normativeness of physical discipline did not moderate the relation between physical discipline and perceived maternal hostility. The effects of harsh verbal discipline were more adverse when children perceived that form of discipline as being nonnormative than when children perceived that form of discipline as being normative. Results are largely consistent with a theoretical model positing that the meaning children attach to parents' discipline strategies is important in understanding associations between discipline and children's adjustment, and that cultural context is associated with children's interpretations of their parents' behavior.

Keywords

children's adjustment, culture, hostility, parental discipline

A growing body of research documents cultural differences in the link between parents' use of physical discipline and children's adjustment, and suggests that children's interpretations of their parents' behavior may be a key mediating factor. Deater-Deckard and Dodge (1997) proposed that the cultural normative context in which physical discipline occurs alters the meaning of discipline to the child. This principle likely applies not just to physical discipline but to other forms of harsh discipline as well. If physical punishment or other forms of discipline are administered in a context in which that form of discipline is normative or accompanied by parental warmth and a goal of helping the child grow into a responsible adult, then that caring message might be received by the child and could buffer the adverse effects of the harsh discipline on child outcomes. If a form of harsh discipline is administered in a context in which that parental behavior is less normative and more aberrant, then the message received by the child may be that the parent is out of control and hostile toward the child, which may be associated with an increase in children's psychological and behavioral problems.

Several scholars have proposed that appraisals play a mediating role in the association between parents' behavior and children's adjustment. Notably, Rohner's (1986) parental acceptance–rejection theory, which has been examined across many cultures, asserts that if children interpret their parents' behavior as rejecting and hostile, it will have deleterious effects on their adjustment. The major premise of Rohner's theory is that children throughout

the world need to feel accepted and loved by their parents (see Rohner, Khaleque, & Cournoyer, 2005, for a full account). If children perceive that their parents are rejecting and hostile rather than warm and accepting, they react with hostility, aggression, anxiety, depression, and a host of other negative responses. Parental acceptance is defined in terms of the “warmth, affection, care, comfort, concern, nurturance, support, or simply love” that children receive from their parents (Rohner et al., 2005, p. 5). In contrast, parental rejection and hostility are defined as the “absence or significant withdrawal of these feelings and behaviors and by the presence of a variety of physically and psychologically hurtful behaviors and affects” (Rohner et al., 2005, p. 5).

¹ Duke University, USA

² University of South Carolina, USA

³ Chinese University of Hong Kong, China

⁴ University of Delhi, India

⁵ Chiang Mai University, Thailand

⁶ Maseno University, Kenya

⁷ Virginia Tech, USA

Corresponding author:

Jennifer E. Lansford, Duke University, Center for Child and Family Policy,
Box 90545, Durham, NC 27708-0545, USA.

Email: Lansford@duke.edu

In one empirical investigation of this theory, Rohner, Bourque, and Elordi (1996) found in a sample of 281 9–18-year-olds in a poor community of African Americans and European Americans in the southern United States that children's perceptions of the harshness and justness of their parents' physical punishment did not have direct effects on children's psychological adjustment; instead, these effects were fully mediated by children's perceptions of their parents' acceptance and rejection. Similarly, Rohner, Kean, and Cournoyer (1991) found in a sample of 349 9–16-year-old youths from St. Kitts, West Indies, that parents' use of physical discipline negatively affects children's adjustment in part through its effect on children's perception of being rejected by their parents. In a meta-analysis of 43 studies with 7,563 participants from around the world, children's perceptions of their parents' acceptance and rejection were associated with children's psychological adjustment in virtually every group tested (Khaleque & Rohner, 2002). The meta-analysis concluded that 3,433 studies, all with nonsignificant results, would be required to disconfirm the conclusion regarding the association between parental acceptance-rejection and children's adjustment (Khaleque & Rohner, 2002).

Rohner's theory addresses the role of children's perceptions of their parents' rejection and hostility as mediators of the link between parents' behaviors and children's adjustment, but Rohner's theory does not detail the factors that could contribute to shaping children's perceptions of their parents' behavior as being indicative of hostility. A normativeness perspective offers one explanation of why parents' behavior may or may not be perceived by a child as indicating parental hostility. That is, Rohner's theory would posit that the effect of punishment depends on the meaning that it delivers for the parent and child, and a normativeness perspective would posit that the meaning of punishment may be altered by the context in which it is employed. What is lacking from the extant research is a direct statistical comparison to determine whether the perceived normativeness of a discipline practice within a cultural context moderates links between that type of discipline and children's perceptions of their parents as being hostile.

Lansford et al. (2005) examined the question of cultural moderation of individual parenting effects on a child in a cross-national investigation in six countries by addressing the issue of cultural normativeness. They found that children's and mothers' perceptions of cultural normativeness of physical discipline moderated the association between experiencing physical discipline and child aggression and anxiety, indicating that more frequent experience of physical discipline was less strongly associated with adverse child outcomes in countries where the experience of physical discipline is more normative, with particularly robust findings for children's perceptions of normativeness. Although more frequent physical discipline was related to higher levels of child aggression and anxiety in all six countries, the countries with the lowest normative use of physical discipline showed the strongest positive association between individual mothers' use of physical discipline and their children's behavior problems. A question left unanswered by this study is whether children are more likely to perceive harsh discipline as indicating parental hostility when they perceive harsh discipline to be nonnormative than when they perceive harsh discipline to be normative.

The conceptual framework guiding the present study brings together Rohner's (1986) parental acceptance-rejection theory and a cultural normativeness perspective (Deater-Deckard & Dodge, 1997). This framework suggests that parenting behaviors have an effect on child outcomes through the meaning that they

communicate to the child (Rohner, 1986) and that this meaning is understood in the cultural contexts in which parenting occurs (Deater-Deckard & Dodge, 1997). Countries may differ in the extent to which different discipline strategies are accepted as appropriate childrearing techniques (Lansford et al., 2005). Within countries that endorse a particular discipline strategy, children may infer its normativeness by witnessing or hearing about many parents using that strategy with their children, and may therefore be less likely to perceive that strategy as being an indicator of parental hostility but rather may interpret it as an indicator of "good" parenting, even if the strategy is harsh. That is, children's inferences about the normativeness of different discipline strategies are important because such inferences provide a framework within which children can contextualize the discipline strategies that their own parents use. Specifically, this study will enable us to test hypotheses that children's perceptions of their parents' hostility mediate the association between the discipline behavior and children's adjustment.

Within the overarching framework of examining associations between parents' discipline strategies and children's adjustment, we chose to focus on one physical discipline strategy and one harsh verbal discipline strategy. Studies have varied in terms of which specific behaviors are included in the construct of physical discipline, although spanking, slapping, and grabbing are often included, and behaviors as severe as beating the child (e.g., repeatedly striking the child with a fist or object) often are not (see Gershoff, 2002). Where to draw the line between physical discipline and physical abuse has been a question that has plagued this line of research (e.g., Whipple & Richey, 1997). In the present study, we included spanking/slapping as our indicator of physical discipline. We also examined the effects of one type of harsh verbal discipline: saying that the mother will not love the child. There is evidence that love withdrawal can gain the child's immediate compliance in a discipline situation (Chapman & Zahn-Waxler, 1982), but love withdrawal may also undermine children's sense of security in the parent-child relationship (Grusec & Goodnow, 1994).

In addition to examining two types of discipline, we examined two types of outcomes, namely, children's aggression and anxiety. Children's aggression and other forms of externalizing behaviors have been the most commonly studied outcomes in the discipline literature, particularly in relation to parents' use of physical discipline (e.g., Gershoff, 2002). Although children's aggression often elicits parents' use of physical discipline (Larzelere, 2000; Lytton, 1990), physical discipline has been found in many studies to have the unintended effect of increasing rather than decreasing children's subsequent aggression (e.g., Sheehan & Watson, 2008). Children's anxiety and internalizing problems are less likely to elicit parental discipline than are children's aggressive behaviors, but parents' use of physical discipline or harsh verbal strategies may lead to children's internalizing problems (Bender et al., 2007). Different informants see children in different contexts and have differential access to children's internal states so different informants may have distinct perspectives on children's psychological and behavioral adjustment; these perspectives are often only moderately correlated with each other. In the present study we include both mothers' and children's reports of children's aggression and anxiety.

Middle childhood (in the present study, from age 8 to 12) is a developmental period of particular interest with respect to understanding children's perceptions of their parents' behavior, and how these appraisals relate to children's behavioral and psychological adjustment. Researchers have characterized dramatic changes in cognitive development between the ages of 5- and 7-years-old as the

“5 to 7 year shift” (Sameroff & Haith, 1986; Siegler & Alibali, 2004). Because of these changes, 8-year-olds are often included in research that focuses on children’s reasoning about themselves and other people (Alvarez, Ruble, & Bolger, 2001; Harter, 1996), and at this age, children’s beliefs become notably better predictors of their subsequent behavior than at earlier ages (Davis-Kean, Huesmann, Jager, Collins, Bates, & Lansford, 2008; Huesmann & Guerra, 1997). Thus, around the age of 8 years, the meaning that children attach to their parents’ behavior may become more salient. Because of evidence that parents’ discipline practices change as children age, and that discipline practices may relate differently to children’s adjustment in early childhood, middle childhood, and adolescence (Collins, Madsen, & Susman-Stillman, 2002; Giles-Sims, Straus, & Sugarman, 1995), we focused on children between the ages of 8 and 12 years. Children in this age range are also likely to have the requisite exposure to peers to assess normativeness of different discipline practices.

The present study

This study tested the hypotheses that: 1) links between mothers’ discipline strategies and children’s adjustment are mediated by children’s perceptions of their mothers as being hostile; and 2) this mediation is moderated by the normativeness of particular discipline strategies because the normativeness of a discipline strategy alters children’s interpretation of mothers’ use of these strategies. We focused on two types of maternal discipline strategies (physical discipline and harsh verbal discipline), the mediating perception of maternal hostility, and two domains of children’s adjustment (aggression and anxiety). We hypothesized that the link between mothers’ discipline and children’s adjustment can be explained, at least in part, by children’s perceptions of their mothers as being hostile. We hypothesized that mothers’ use of physical discipline and harsh verbal discipline would be related to children’s perceptions of their mothers as being hostile; and that these perceptions, in turn, would predict higher levels of aggression and anxiety in children. Further, we hypothesized that children’s perceptions of the normativeness of a given discipline strategy would moderate the mediated relations such that children would be less likely to interpret physical discipline and harsh verbal discipline as indicators of maternal hostility if they perceived the use of these techniques to be normative.

To test these hypotheses, we analyzed data from mother-child dyads in four countries: China, India, the Philippines, and Thailand. We chose samples from different countries rather than a sample from a single country to understand normative influences in defining harsh discipline. Our own previous research (Gershoff et al., 2010; Lansford et al., 2005) and research using other samples (International Clinical Epidemiology Network, 2001) suggests that these countries differ in the frequency with which mothers use different discipline strategies and in how normative children perceive different discipline strategies to be.

Method

Participants

Children and their mothers ($N = 195$ dyads) were recruited for participation through public schools in Beijing, China ($n = 46$; 46% girls; M age = 10.63, $SD = 1.50$); New Delhi, India ($n = 43$; 59% girls; M age = 10.49, $SD = 1.50$); Manila, Philippines ($n = 49$; 37% girls; M age = 10.24, $SD = 1.51$); and Chiang Mai,

Thailand ($n = 57$; 56% girls; M age = 10.18, $SD = .69$). Beijing, New Delhi, Manila, and Chiang Mai are all major urban areas in their respective countries (each is the second largest city in its country). Beijing, New Delhi, and Manila are all capital cities; Chiang Mai is the capital of Chiang Mai Province and the largest and most culturally important city in Northern Thailand. India (as a colony of the United Kingdom) and the Philippines (as a colony of Spain and the United States) historically have had more exposure to western influence than have China and Thailand. In both India and the Philippines, English is an official language.

There were no significant differences across countries in the age or gender of the child participants. In all cases, the biological mother was interviewed. Mothers ranged in age from 20–57 years (China $M = 37.52$, $SD = 3.95$; India $M = 37.74$, $SD = 4.38$; the Philippines $M = 37.20$, $SD = 6.88$; Thailand $M = 39.84$, $SD = 6.07$). Maternal age did not differ significantly across countries, $F(3, 191) = 2.53$, *ns*. Most of the mothers were married (98%, 94%, 90%, and 84% in China, India, the Philippines, and Thailand, respectively). There were no significant country differences in the marital status of the mothers, $\chi^2(3) = 6.31$, *ns*. The number of children in the household ranged from 1 to 8 (China $M = 1.02$, $SD = .15$; India $M = 2.05$, $SD = .62$; the Philippines $M = 2.86$, $SD = 1.38$; Thailand $M = 1.93$, $SD = .83$). There were significant country differences in number of children in the household, $F(3, 190) = 34.68$, $p < .001$. Post-hoc follow-up tests with Bonferroni corrections indicated that families in China had significantly fewer children than did families in the other three countries (almost certainly because of the one-child policy in China). Families in India and Thailand had significantly fewer children than did families in the Philippines. Although there are ethnic minorities in these countries, the participants did not identify themselves as being members of any ethnic minority groups.

Within each country, the samples were considered primarily middle class and had similar standings in terms of within-country socioeconomic status. However, there were differences in socioeconomic status between countries that were handled by the fixed-effects aspect of our analysis strategy described below. Income was assessed in local currency using ranges that reflected income distributions within a particular country. Annual median income ranges (converted to U.S. dollars and Euros) in each country were as follows: (a) China median = \$2,172–\$5,796 / €1,738–€4,637 (which may be an underestimate because it does not include bonuses that many Chinese employees earn in addition to their base salary); (b) India median = \$13,728–\$16,464 / €10,982–€13,171; (c) Philippines median = \$3,306–\$4,404 / €2,645–€3,523; and (d) Thailand median = \$3,036–\$15,180 / €2,429–€12,144.

For the principal hypotheses of mediation, we considered power to detect indirect effects using the percentile bootstrap, as outlined in Fritz and MacKinnon (2007). In their analysis of sample size required for testing mediated effects, Fritz and MacKinnon found that the percentile bootstrap had 80% power to detect a mediated effect when the component paths (exogenous variable to mediator, and mediator to outcome) were “halfway” between small and medium ($\beta = .26$) with a sample size of 162. Therefore, we concluded that our sample size of 195 was adequate for detecting mediated effects of reasonable magnitude.

Measures

A procedure of translation and back-translation was used to ensure the linguistic and conceptual equivalence of measures across

languages. The translators were fluent in English and the target language. In addition to simply translating and back-translating the measures, translators were asked to: (a) note places in the research instruments that did not translate well, were inappropriate for the different groups, or were culturally insensitive; (b) identify words that elicited several meanings in particular contexts; (c) make suggestions for improvements of instruments if they identified problems; and (d) indicate reasons for altering the translated versions if discrepancies were identified and alterations were deemed necessary. Site coordinators and the translators reviewed the identified discrepancies and unclear items and made appropriate modifications to the items. English versions of the measures were administered in the Philippines and India, where English is an official language. Measures were administered in Mandarin Chinese in China and Thai in Thailand.

Discipline use and normativeness (mother- and child-report). A discipline interview was developed for the present study. Mothers were asked how frequently (1 = never, 2 = less than once a month, 3 = about once a month, 4 = about once a week, 5 = almost every day) they use each of 17 discipline strategies that were adapted from other instruments that assess parents' discipline strategies (Deater-Deckard, Dodge, & Sorbring, 2005; Straus, 1979) as well as our own pilot studies in the targeted countries. For the present study, analyses focused on one physical discipline strategy (spank or slap) and one harsh verbal strategy (say won't love) that are of conceptual relevance to the hypotheses.

A child-report version of this measure was used to assess children's perceptions of the normativeness of each form of discipline. Children were asked to report how frequently other parents in their communities used each of these two discipline strategies (1 = never, 2 = less than once a month, 3 = about once a month, 4 = about once a week, 5 = almost every day; Lansford et al., 2005).

Mothers' hostility (child-report). Children were asked to report on their experience of their mothers' hostility (15 items; e.g., My mother gets angry at me easily) using Rohner's Parental Acceptance-Rejection Questionnaire. Using a slightly modified version of the original rating scale (which was 1 = almost always true, 2 = sometimes true, 3 = rarely true, 4 = almost never true), children indicated how often their mothers engaged in each behavior included in the questionnaire (1 = almost never, 2 = once a month, 3 = once a week, 4 = every day); we modified the rating scale from the original so that the anchors would be tied to more concrete time periods. The items were averaged to create the hostility subscale ($\alpha = .76, .76, .89, \text{ and } .85$ in China, India, the Philippines, and Thailand, respectively). This measure has been translated into at least 28 languages and has been used in at least 60 countries. Overall, the measure has been shown to have good psychometric properties (including test-retest reliability, internal consistency reliability, convergent validity, and discriminant validity in several studies designed specifically to assess the measure's psychometric properties, see Rohner, 2005) across a number of cultural groups, including those in the present study (Khaleque & Rohner, 2002; Rohner & Britner, 2002; Rohner, Saavedra, & Granum, 1978).

Child Behavior Checklist and Youth Self-Report (mother- and child-report). The Child Behavior Checklist (CBC; Achenbach, 1991) is a widely used parent-report measure of children's internalizing and externalizing behavior problems.

Mothers rated whether each item (e.g., fearful or anxious; cruelty, bullying, or meanness to others) was "not true," "somewhat or sometimes true," or "very true or often true" of their child. The Youth Self-Report (YSR; Achenbach, 1991) is a widely used measure of children's self-reported internalizing and externalizing behavior problems. Children rated whether each item (e.g., "I worry a lot;" "I get in many fights") was "not true," "somewhat or sometimes true," or "very true or often true" of them. Responses were summed to create scale scores. For the present study, analyses focused on the aggression and anxiety scales ($\alpha = .73, .75, .84, \text{ and } .70$ in China, India, the Philippines, and Thailand, respectively, 16 items for YSR anxiety; $.83, .51, .81, \text{ and } .83$ in China, India, the Philippines, and Thailand, respectively, 19 items for YSR aggression; $.89, .42, .82, \text{ and } .64$ in China, India, the Philippines, and Thailand, respectively, 14 items for CBC anxiety; and $.81, .48, .85, \text{ and } .83$ in China, India, the Philippines, and Thailand, respectively, 20 items for CBC aggression). The CBC and YSR have been translated into at least 64 languages, and published studies have used these measures with at least 50 cultural groups. The Achenbach measures have been used previously in all of the countries involved in the present study: China (e.g., Dong, Wang, & Ollendick, 2002), India (Gill & Kang, 1995), Philippines (Flores, 1988), and Thailand (Weisz, Suwanlert, Chaityasit, Weiss, Achenbach, & Eastman, 1993).

Procedure

The present study focuses on four countries: China, India, the Philippines, and Thailand. Before the formal interview began, interviewers read aloud the consent forms and discussed them with participants. Mothers signed statements of informed consent, and children signed statements of assent. Interviewers were trained in how to handle concerns about possible child abuse or neglect. The consent form indicated that we would take steps to report concerns if participants posed a serious danger to themselves or others or if there was evidence to suggest child abuse or neglect. Parents' and children's reports did not trigger interviewers' concerns that children in our sample were being abused or neglected.

Interviews were conducted in the homes of the participants by one or two interviewers who were natives of the country. Most of the interviewers were trained graduate students in psychology who conducted pilot trials before the actual interviews. Each interview lasted about one hour. The interviewer read aloud each question from the printed questionnaire. After each question was read, the participant verbalized a response or pointed to the answer on the printed questionnaire or separate pictorial response card, and the interviewer recorded the response. The mother and the child were interviewed separately in different rooms and/or at different times so that they could not hear each other's responses.

Results

Sample statistics and missing data

Table 1 presents means and standard deviations of the variables in each country along with tests for differences among the countries on the study variables. As shown, mothers, on average, reported physical discipline and harsh verbal discipline infrequently (means less than once a month across most countries). Similarly, children, on average, reported that other parents in their community used these discipline strategies infrequently (again with means between never and less than once a month across most countries).

Table 1. Sample characteristics and tests of country differences

Construct	China (n = 46)		India (n = 43)		Philippines (n = 49)		Thailand (n = 57)		F(3, 191)
	M	SD	M	SD	M	SD	M	SD	
Physical discipline (M) ^d	1.89	1.02	2.28 _a	1.08	2.06 _a	1.09	1.51 _b	.71	5.71**
Harsh verbal discipline (M) ^d	2.09 _a	1.38	2.35 _a	1.25	1.45 _b	.74	2.00	1.20	4.98**
Norm of phys disc (C) ^d	1.78	1.19	2.35 _a	1.11	1.88	.98	1.49 _b	.76	6.03**
Norm of harsh verbal disc (C) ^d	1.41 _a	.96	1.84 _a	1.00	1.81 _b	1.18	1.66 _a	1.08	1.54
Maternal hostility (C) ^e	1.66	.43	1.77	.40	2.09 _a	.58	1.81 _b	.53	6.54***
Child anxiety (C) ^f	6.59 _a	4.43	8.70	4.33	8.37	4.98	8.96 _b	3.65	2.92*
Child anxiety (M) ^g	5.22	4.71	5.26	4.07	6.37	4.00	4.93	3.12	1.28
Child aggression (C) ^h	9.50 _a	5.37	10.67 _a	4.08	13.73 _b	5.37	10.67 _a	5.22	6.17**
Child aggression (M) ⁱ	8.43 _a	5.35	8.21 _a	4.25	13.45 _b	6.28	7.20 _a	4.81	14.31***

Note. M = mother-report. C = child-report. Means with _a differ significantly from those with _b. * $p < .05$; ** $p < .01$; *** $p < .001$; ^d possible range = 1 (never)–5 (almost every day); ^e possible range = 1–4, with higher scores reflecting more hostility; ^f possible range = 0–32, with higher scores reflecting more anxiety; ^g possible range = 0–28, with higher scores reflecting more anxiety; ^h possible range = 0–38, with higher scores reflecting more aggression; ⁱ possible range = 0–40, with higher scores reflecting more aggression.

Table 2. Correlations among study variables in China and India

Construct	1	2	3	4	5	6	7	8	9
1. Physical discipline (M)	–	.39	.44	-.02 ^a	.41	-.04 ^a	.13 ^a	-.04 ^a	.22 ^a
2. Harsh verbal discipline (M)	.64	–	.29 ^a	.35	.41	-.16 ^a	-.02 ^a	.06 ^a	.13 ^a
3. Norm of phys disc (C)	.44	.11 ^a	–	.18 ^a	.51	-.04 ^a	.17 ^a	-.02 ^a	.01 ^a
4. Norm of harsh verbal disc (C)	.46	.29	.52	–	.09 ^a	-.14 ^a	-.12 ^a	-.12 ^a	-.21 ^a
5. Maternal hostility (C)	.41	.45	.57	.36	–	.07 ^a	.12 ^a	.11 ^a	.11 ^a
6. Child anxiety (C)	.42	.21 ^a	.39	.50	.37	–	.47	.18 ^a	.03 ^a
7. Child anxiety (M)	.63	.58	.17	.38	.50	.38	–	.21 ^a	.31
8. Child aggression (C)	.47	.36	.56	.62	.68	.63	.46	–	.31
9. Child aggression (M)	.64	.49	.45	.37	.57	.34	.61	.57	–

Note. ^a Correlation is not statistically significant (i.e., bootstrapped 95% confidence interval includes 0). All other correlations are statistically significant. M = mother-report. C = child-report. Correlations for China are presented below the diagonal; correlations for India are presented above the diagonal.

Table 3. Correlations among study variables in Philippines and Thailand

Construct	1	2	3	4	5	6	7	8	9
1. Physical discipline (M)	–	.19 ^a	.29	.16 ^a	.14 ^a	.15 ^a	.22 ^a	.14 ^a	.29
2. Harsh verbal discipline (M)	.33	–	.06 ^a	.23 ^a	.18 ^a	.07 ^a	.37	.19 ^a	.56
3. Norm of phys disc (C)	.46	.37	–	.12 ^a	.43	.23 ^a	.02 ^a	.25 ^a	-.02 ^a
4. Norm of harsh verbal disc (C)	.45	.20 ^a	.29	–	.26 ^a	.14 ^a	.25 ^a	.12 ^a	.33
5. Maternal hostility (C)	.51	.34	.36	.58	–	.34	.02 ^a	.43	.03 ^a
6. Child anxiety (C)	.28	.26 ^a	.05 ^a	.57	.55	–	.22 ^a	.78	.03 ^a
7. Child anxiety (M)	.28	.18 ^a	.24 ^a	.09 ^a	.25 ^a	.40	–	.14	.54
8. Child aggression (C)	.53	.35	.44	.42	.64	.58	.32	–	.10 ^a
9. Child aggression (M)	.55	.18 ^a	.32	.21 ^a	.35	.27 ^a	.49	.60	–

Note. ^a Correlation is not statistically significant (i.e., bootstrapped 95% confidence interval includes 0). All other correlations are statistically significant. M = mother-report. C = child-report. Correlations for Philippines are presented below the diagonal; correlations for Thailand are presented above the diagonal.

The aggression and anxiety raw scores from the Achenbach scales were transformed to reduce the typical positive skew (ln (raw score + 1)).

Tables 2 and 3 present correlations among the variables for each country subsample. As shown, more frequent use of physical discipline is moderately associated with more frequent use of harsh verbal discipline, and the use of these discipline strategies is associated with perceptions of more maternal hostility and more child anxiety and aggression, although the significance of these associations varies across countries. The tabled values are based on those

respondents providing valid data for each variable, with no adjustments for missing data. Missing data were minimal. We had no missing data in India. One case was missing data on child-reported normativeness of physical discipline in China, one case was missing data on child-reported normativeness of each discipline strategy and maternal hostility in the Philippines, and one case was missing data on child-reported normativeness of harsh verbal discipline and mother-reported anxiety and aggression in Thailand. In subsequent analyses, models were estimated using the missing data facility in Mplus v. 5.2 (Muthén & Muthén, 2009).

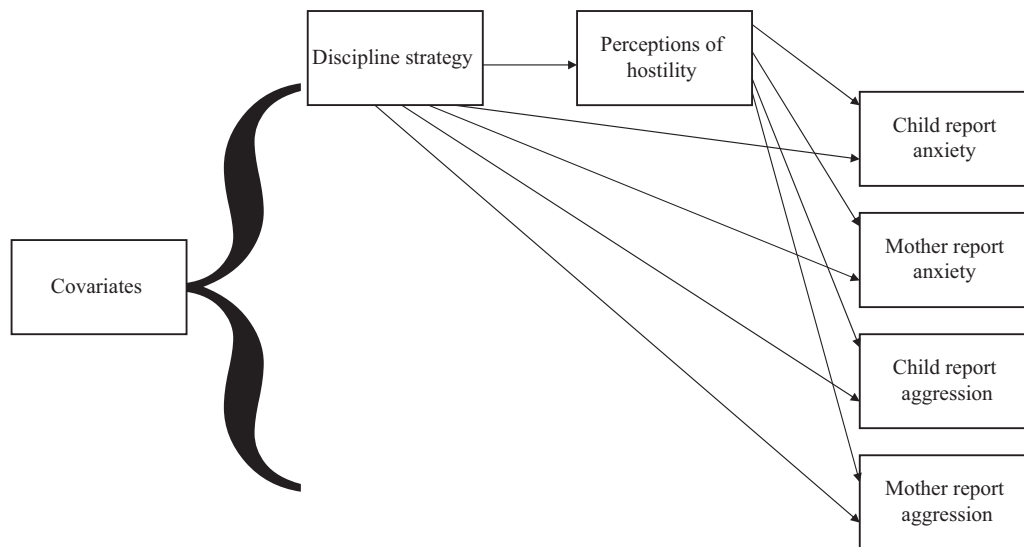


Figure 1. Mediation model. Covariates included child's age and gender, mother's age, one vs. two parents, and family size. Paths for disturbance terms are not shown.

Analysis strategy

All models were estimated as path analyses in Mplus v. 5.2 (Muthén & Muthén, 2009). Due to the small sample size, we decided not to use a measurement model, but instead focused on relations among observed variables (see Figure 1). The child's age and gender, mother's age, and household structure (one vs. two parents, family size) were included as covariates in all analyses, predicting all other variables. Differences in socioeconomic status between countries were handled by the fixed-effects aspect of our analyses. Tests of mediating relations used Mplus's facility for testing indirect effects with bootstrapped confidence intervals, following the recommendation of MacKinnon (2008) for complex models. That is, each indirect effect was estimated as the product of the two component path coefficients with an asymmetric empirical confidence interval derived from the percentile bootstrap with 3,000 draws. The 95% confidence interval is calculated as the 2.5 and 97.5 percentiles of the empirical distribution of the indirect effect. The net result of this approach is a confidence interval for the indirect effect that does not rely on assumptions of normal sampling distributions, which Bollen and Stine (1992) established as being the exception rather than the rule for products of coefficients.

Mediation tests

The mediation hypotheses were tested via path analyses implemented in Mplus. Given the small sample size of both countries and respondents within countries, we used a simple adjustment for country of origin, covarying the nominal country variable (effect-coded for Mplus) in each model, thus treating it as a fixed effect. Given the flexibility of path analysis in structural equation modeling software, we were able to test four mediation relations in each model (two adjustment outcomes—aggression and anxiety—by two reporters—mothers and children). We estimated separate models for physical discipline and harsh verbal discipline, for a total of eight mediation tests. Thus, all four outcomes were considered simultaneously. The tests of each mediated effect are based on the bootstrapped confidence interval of the product of the path

coefficient from the discipline usage to perceptions of hostility and the path coefficient from perceptions of hostility to the adjustment outcome. These mediation tests are summarized in Table 4, shown with the direct (residual) effects from discipline usage to the adjustment outcomes. As indicated by the confidence intervals for the indirect effects, children's perception of maternal hostility mediated the effects of seven of the possible eight relations between discipline and adjustment outcomes.¹

Moderation by perceived normativeness

To test the hypothesis that children's perceptions of the normativeness of each type of discipline would moderate the link between the use of the discipline strategy and children's perceptions of maternal hostility, we tested two interaction effects: perceived normativeness of physical discipline \times frequency of physical discipline on perceived hostility and perceived normativeness of harsh verbal discipline \times frequency of harsh verbal discipline on perceived hostility. Using simple product-term interaction effects (i.e., the mean-centered discipline score multiplied by the mean-centered perceived normativeness score), we identified a significant interaction between perceived normativeness and harsh verbal discipline on children's perception of maternal hostility, $b = 0.061$, $SE = 0.024$, $Est./SE = 2.60$, $p = .009$. Children's perception of normativeness of physical discipline did not moderate the relation between physical discipline and perceived maternal hostility, $p = .532$. The main effects for harsh verbal discipline were significant and positive, moderated by perceived normativeness such that the effects of harsh verbal discipline were more adverse when children perceived that form of discipline as being nonnormative than when children perceived that form of discipline as being normative.

Discussion

Both physical discipline and harsh verbal discipline had direct effects on mothers' reports of children's anxiety and aggression; three of these four links were mediated by children's perceptions of maternal hostility. There were no significant direct effects of

Table 4. Tests of indirect effects

Predictor	Mediator	Child outcome			
		Child anxiety		Child aggression	
		Child report	Mother report	Child report	Mother report
Physical discipline	Perceptions of hostility	0.051* (0.020, 0.089)	0.035 (-0.001, 0.080)	0.078* (0.047, 0.117)	0.032* (0.003, 0.071)
	Direct effect	0.076 (-0.005, 0.158)	0.216* (0.116, 0.313)	0.054 (-0.014, 0.120)	0.210* (0.113, 0.303)
Harsh verbal discipline	Perceptions of hostility	0.045* (0.021, 0.076)	0.029* (0.004, 0.061)	0.059* (0.032, 0.093)	0.026* (0.004, 0.052)
	Direct effect	-0.004 (-0.070, 0.063)	0.164* (0.085, 0.243)	0.030 (-0.026, 0.086)	0.177* (0.106, 0.253)

Note. * $p < .05$. Values are estimates of indirect effects via perceptions of hostility and direct (residual) effects. Numbers in parentheses represent 95% confidence intervals.

physical discipline and harsh verbal discipline on children's reports of their own anxiety and aggression. Instead, both physical discipline and harsh verbal discipline had indirect effects on the child-reported outcomes through children's perceptions of maternal hostility. We identified significant interactions between perceived normativeness and use of harsh verbal discipline on children's perception of maternal hostility, but children's perception of normativeness of physical discipline did not moderate the relation between physical discipline and perceived maternal hostility.

These findings largely supported our two main hypotheses. First, we had hypothesized that links between mothers' discipline strategies and children's adjustment would be mediated by children's perceptions of their mothers as being hostile. This hypothesis was supported with respect to seven of the eight mediation models tested. Second, we had hypothesized that this mediation would be moderated by the normativeness of particular discipline strategies because the normativeness of a discipline strategy alters children's interpretation of their mothers' hostility. This finding was supported with respect to harsh verbal discipline but not with respect to physical discipline. Specifically, for children who perceived harsh verbal discipline to be normative in their cultural context, the experience of that form of discipline was less likely to be interpreted as indicating maternal hostility.

These findings are important because they provide direct evidence regarding the theoretical proposition that the meaning that children attach to being disciplined in a particular manner is related to the link between that form of discipline and children's adjustment. This finding builds on a growing literature regarding the importance of cultural context in understanding parental discipline. Lansford et al. (2005) found that the cultural normativeness of physical discipline moderated the link between physical discipline and children's adjustment. The present study extends understanding of this phenomenon by demonstrating that when children perceive the use of harsh verbal discipline to be normative, children are less likely to interpret its use as a reflection of their mothers' hostility. However, children's perceptions of the normativeness of physical discipline did not moderate the link between mothers' use of physical discipline and children's perceptions of their mothers as being hostile. The findings from this study may have differed from those of Lansford et al. (2005) because of differences in the sample characteristics, operational definitions of variables, and the statistical approach. Perhaps most importantly, Lansford et al. (2005)

included data from Italy and Kenya in addition to China, India, the Philippines, and Thailand. The rank order (from low to high) of how often mothers reported using physical discipline was Thailand, China, the Philippines, Italy, India, and Kenya. In terms of children's perceptions of how normative physical discipline was, Italy and Kenya were higher than the other four countries. Data needed for the current analyses were not available from Italy or Kenya, but limiting the analyses to the countries in which physical discipline was less normative may have impeded our ability to find normativeness moderation. Future research should examine other factors (e.g., warmth, responsiveness) that might account for why some children come to perceive their mothers who use physical discipline as being hostile whereas others do not.

The present study is unique in its testing of the moderated mediation hypothesis, but other researchers also have hypothesized that the meaning conveyed to children by discipline is important in understanding how discipline is associated with child outcomes (e.g., Gunnoe & Mariner, 1997; Rohner, 1986). In addition, several studies have examined different aspects of the context in which discipline is administered as moderators of the link between discipline and children's adjustment. For example, there is some evidence that physical discipline and children's adjustment are unrelated after taking into account the context of parenting such as warmth and involvement (e.g., Darling & Steinberg, 1993; Larzelere, Klein, Schumm, & Alibrando, 1989; Simons, Wu, Lin, Gordon, & Conger, 2000). Trust and reciprocity in parent-child relationships are engendered by parental warmth (Grusec & Goodnow, 1994; Maccoby, 1980; Maccoby & Martin, 1983), which may offset the potential deleterious effects of physical discipline. For example, McLoyd and Smith (2002) found that only in the context of low maternal support, but not high maternal support, spanking predicted an increase in mother-reported internalizing and externalizing problems over time for European American, African American, and Hispanic children from the National Longitudinal Survey of Youth. The present findings also extend Rohner's (1986; Rohner et al., 1991) work on children's perceptions of parental hostility as a mediator of the link between physical discipline and children's adjustment by showing that the effects generalize to harsh verbal discipline and a cross-national context that makes possible the examination of cultural normativeness as a moderator of the mediated effect.

The cultural normativeness aspect of our findings raises questions that could be addressed in future research using immigrant

families. Immigrants endorse parenting values and norms from their country of origin as well as their country of destination (Bornstein & Cote, 2007). How parenting practices are perceived and experienced by children may depend on how integrated the family is in the country of origin, and the extent to which there may be a mismatch between values and norms in the country of origin versus the country of destination (Chase-Lansdale, Valdovinos D'Angelo, & Palacios, 2007). Future research could investigate the complexities of competing cultural norms in immigrant families.

Our findings are interesting in relation to the suppression-facilitation and the adult distinct threshold models of understanding children's socioemotional adjustment in different cultural contexts proposed by Weisz, Suwanlert, Chaiyasit, and Walter (1987). According to the suppression-facilitation model, cultural values and norms directly affect children's behavior such that, for example, children who live in cultures that value violence will be more likely to exhibit violent behavior themselves (Weisz et al., 1987). According to the threshold model, adults in different cultural contexts may have different thresholds for determining which child behaviors are problematic. For example, teachers in Thailand expect that children will not be aggressive and disruptive in school and have low thresholds for tolerating such behavior (Weisz, Chaiyasit, Weiss, Eastman, & Jackson, 1995). Teachers have been found to report higher levels of child externalizing problems in Thailand than in the United States, but independent observers have been found to report lower levels of child externalizing in Thailand than in the United States, perhaps because culture shapes adults' perceptions of the acceptability of children's behavior (Weisz et al., 1995). These models might be extended beyond thinking about children's behavior problems to thinking about how children's and parents' perceptions of the normativeness of different discipline strategies and perceptions of parents' hostility are shaped. For example, cultural values and norms may affect not only children's behavior (as would be suggested by the suppression-facilitation model) but also which discipline strategies parents choose to use. Likewise, different cultural groups may have different thresholds not only for determining which child behaviors are problematic (as would be suggested by the threshold model) but also for determining which parental discipline practices are problematic. We should note that mothers reported using physical discipline and harsh verbal discipline infrequently in the countries included in this study (less than once a month, on average), and children reported that other parents in their community used these strategies infrequently as well. There is evidence that parents in these countries use other discipline strategies such as reasoning and manipulating privileges more frequently than they use the harsher strategies (Gershoff et al., 2010).

One of the primary strengths of our study is the inclusion of data from mothers and children in four countries. However, a limitation is that we do not have data reported by or about fathers. An important direction for future research will be to include fathers to understand better their role in disciplining children and how this role may be similar to or different from the role of mothers. It is possible that countries differ in how balanced discipline responsibilities are for mothers versus fathers. It will also be important for future research to study discipline in relation to broader authoritative, authoritarian, and permissive parenting styles. Doing so will afford the opportunity to understand discipline within the larger context of family functioning.

Given our small sample sizes in each country subsample and non-random sampling, we cannot argue that our samples are representative of their respective countries and cannot extrapolate

from our findings to conclusions about all mothers or children in the country populations from which these samples were drawn. In addition, there were low alphas for India for youth-reported aggression, mother-reported anxiety, and mother-reported aggression, and for Thailand for mother-reported anxiety. There is an extensive literature using these Achenbach scales, including in India and Thailand, but caution is warranted in interpreting the findings, especially for India. Another limitation is that the data are cross-sectional and correlational, leaving open the possibility that child adjustment causes parenting practices. That is, more difficult children may elicit physical discipline and harsh verbal discipline from their parents (e.g., Campbell, 1990). Other studies that have examined directions of effects between child misbehavior and parental discipline have found evidence for reciprocal relations such that child misbehavior elicits parental discipline, which either gets the child to stop misbehaving or to escalate the misbehavior, which then elicits another response from the parent (e.g., Patterson, 2002). Future longitudinal research will help elucidate these reciprocal transactions over time.

In the present study, we examined children's perceptions of their mothers' hostility as a mediator of the link between discipline and children's adjustment. The hostility mediator captured qualities of the general valence of the mother-child relationship rather than specific cognitions about discipline. Children's perceptions of their mothers could have been influenced by the broader context of family functioning and cultural norms. For example, if their fathers were the primary disciplinarians, made the majority of household decisions, or both, this could affect children's perceptions of their mothers, regardless of the mothers' discipline styles. A direction for future research will be to ask children more detailed questions about their perceptions of various discipline strategies explicitly (e.g., how much children approve of these different discipline strategies, whether parents are using "good" parenting techniques when they use those strategies) to examine children's cognitive appraisals of discipline as mediators of the link between parents' use of those discipline strategies and their children's adjustment. Children's own experiences of being disciplined in a particular manner may have influenced their perceptions of how normative these discipline practices are. However, it is perceptions of normativeness that are more central to the hypothesized model than actual normativeness. That is, we would expect *perceptions* of normativeness to moderate links between discipline practices and child outcomes, whereas actual normativeness might not (if this were not perceived by the child in question). It is also possible that how accepted physical discipline and harsh verbal discipline are in a given cultural group influenced how willing mothers were to report using these types of discipline.

The finding that cultural contexts moderate the link between harsh verbal discipline and children's perceptions of their mothers as being rejecting should not be taken as endorsement of the use of harsh verbal discipline. There were significant direct effects of both physical discipline and harsh verbal discipline on mothers' reports of children's anxiety and aggression, with more frequent use of these discipline strategies related to more adjustment problems. The analyses focused primarily on within-country mediating effects of children's perceptions of their parents' hostility in attenuating links between harsh discipline and children's adjustment problems. Between countries, the effects may be different. In particular, there is some evidence that in countries where the use of physical discipline is more common, overall levels of societal

violence are higher (Lansford & Dodge, 2008). Thus, within a country, frequent use of a discipline strategy by the cultural group may be related to a decreased likelihood that children will perceive the use of that strategy as being indicative of parental hostility, but between countries there may be higher rates of child externalizing behavior problems in countries where the use of physical discipline is more frequent.

Our findings are part of a larger body of research suggesting practices that could be useful for clinicians. Parents should be encouraged to view their discipline strategies as part of a parenting package that has important implications for their children's behavioral and psychological adjustment. Clinicians can discuss with parents the link between more frequent use of physical discipline and harsh verbal discipline, and children's aggression and anxiety. Clinicians can also work with parents to develop and practice discipline strategies such as reasoning and reinforcing desired behaviors that are not reliant on coercive methods. Regardless of the discipline strategies that parents ultimately choose, clinicians can stress the importance of parents conveying love, warmth, and acceptance (as opposed to hostility) to their children.

Overall, the main contribution of this study is in advancing understanding of one mechanism through which parental discipline may affect children's adjustment. If children perceive their mothers' discipline as conveying hostility, children are more likely to be aggressive, anxious, or both, than if their mothers' discipline does not convey this message. Furthermore, whether harsh verbal discipline predicts children's perceptions of maternal hostility depends on the normativeness of harsh verbal discipline within the context in which it is employed.

Notes

1. To evaluate whether the child's gender influenced the links among discipline, perceived maternal hostility, and the child adjustment outcomes, we estimated two models. Separately for physical discipline and harsh verbal discipline, we modeled the relations from the mediation analyses, above, allowing all parameters to differ between boys and girls. In each model, we then tested the set of constraints that the key parameters of the model—the effects of the discipline strategies on the child's perceptions, the effects of perceptions on the four adjustment outcomes, and the residual (direct) effects of the discipline strategies on youth adjustment—were identical across gender. For both physical discipline and harsh verbal discipline, the constraint sets did not significantly reduce fit, $ps > .05$, suggesting that the models did not differ for boys and girls.

Funding

Data collection for this work was funded by the Josiah Charles Trent Memorial Foundation and the Duke University Center for Child and Family Policy. Author Lansford acknowledges support of NICHD grant R01HD054805. Author Malone acknowledges support of NIDA grant K01DA024116. Author Dodge acknowledges support of NIDA grants K05DA015226 and P30DA023026.

Acknowledgments

We are grateful to the children and parents who participated in this research.

References

- Achenbach, T.M. (1991). *Integrative guide for the 1991 CBCL 14-18, YSR, and TRF Profiles*. Burlington, VT: University of Vermont, Department of Psychiatry.
- Alvarez, J.M., Ruble, D.N., & Bolger, N. (2001). Trait understanding or evaluative reasoning? An analysis of children's behavioral predictions. *Child Development, 72*, 1409–1425.
- Bender, H.L., Allen, J.P., McElhaney, K.B., Antonishak, J., Moore, C.M., Kelly, H.O., et al. (2007). Use of harsh physical discipline and developmental outcomes in adolescence. *Development and Psychopathology, 19*, 227–242.
- Bollen, K.A., & Stine, R.A. (1992). Bootstrapping goodness-of-fit measures in structural equation models. *Sociological Methods and Research, 21*, 205–229.
- Bornstein, M.H., & Cote, L.R. (2007). Knowledge of child development and family interactions among immigrants to America: Perspectives from developmental science. In J.E. Lansford, K. Deater-Deckard, & M.H. Bornstein (Eds.), *Immigrant families in contemporary society* (pp. 121–136). New York, NY: Guilford.
- Campbell, S.B. (1990). *Behavior problems in preschool children*. New York, NY: Guilford.
- Chapman, M., & Zahn-Waxler, C. (1982). Young children's compliance and noncompliance to parental discipline in a natural setting. *International Journal of Behavioral Development, 5*, 81–94.
- Chase-Lansdale, P.L., Valdovinos D'Angelo, A., & Palacios, N. (2007). A multidisciplinary perspective on the development of young children in immigrant families. In J.E. Lansford, K. Deater-Deckard, & M.H. Bornstein (Eds.), *Immigrant families in contemporary society* (pp. 137–156). New York, NY: Guilford.
- Collins, W.A., Madsen, S.D., & Susman-Stillman, A. (2002). Parenting during middle childhood. In M.H. Bornstein (Ed.), *Handbook of parenting (2nd ed.)*, Volume 3: *Being and becoming a parent* (pp. 73–101). Mahwah, NJ: Erlbaum.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*, 487–496.
- Davis-Kean, P.E., Huesmann, L.R., Jager, J., Collins, W.A., Bates, J.E., & Lansford, J.E. (2008). Changes in the relation of self-efficacy beliefs and behaviors across development. *Child Development, 79*, 1257–1269.
- Deater-Deckard, K., & Dodge, K.A. (1997). Externalizing behavior problems and discipline revisited: Nonlinear effects and variation by culture, context, and gender. *Psychological Inquiry, 8*, 161–175.
- Deater-Deckard, K., Dodge, K., & Sorbring, E. (2005). Cultural differences in the effects of physical punishment. In M. Tienda & M. Rutter (Eds.), *Ethnicity and causal mechanisms*. Cambridge: Cambridge University Press.
- Dong, Q., Wang, Y., & Ollendick, T.H. (2002). Consequences of divorce on the adjustment of children in China. *Journal of Clinical Child and Adolescent Psychology, 31*, 101–110.
- Florencio, C. (1988). *Nutrition, health and other determinants of academic achievement and school-related behavior of grades one to six pupils*. Quezon City: University of the Philippines.
- Fritz, M.S., & MacKinnon, D.P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*, 233–239.
- Gershoff, E.T. (2002). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin, 128*, 539–579.
- Gershoff, E.T., Grogan-Kaylor, A., Lansford, J.E., Chang, L., Zelli, A., Deater-Deckard, K., & Dodge, K.A. (2010). Parent discipline practices in an international sample: Associations with child behaviors

- and moderation by perceived normativeness. *Child Development*, 81, 487–502.
- Giles-Sims, J., Straus, M.A., & Sugarman, D.B. (1995). Child, maternal, and family characteristics associated with spanking. *Family Relations*, 44, 170–176.
- Gill, R., & Kang, T. (1995). Relationship of home environment with behavioural problems of pre-school children. *Indian Journal of Psychometry and Education*, 26, 77–82.
- Grusec, J.E., & Goodnow, J.J. (1994). Impact of parental discipline methods on the child's internalization of values: A reconceptualization of current points of view. *Developmental Psychology*, 30, 4–19.
- Gunnoe, M.L., & Mariner, C.L. (1997). Toward a developmental-contextual model of the effects of parental spanking on children's aggression. *Archives of Pediatric and Adolescent Medicine*, 151, 768–775.
- Harter, S. (1996). Developmental changes in self-understanding across the 5 to 7 year shift. In A.J. Sameroff & M.M. Haith (Eds.), *The five to seven year shift*. Chicago, IL: University of Chicago Press.
- Huesmann, L.R., & Guerra, N.G. (1997). Children's normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology*, 72, 408–419.
- International Clinical Epidemiology Network [INCLEN]. (2001). *WorldSAFE: World Studies of Abuse in Family Environments*. Available at: <http://www.inclen.org/research/ws.html>
- Khaleque, A., & Rohner, R. P. (2002). Perceived parental acceptance-rejection and psychological adjustment: A meta-analysis of cross-cultural and intracultural studies. *Journal of Marriage and the Family*, 64, 54–64.
- Lansford, J.E., Chang, L., Dodge, K.A., Malone, P.S., Oburu, P., Palmérus, K., et al. (2005). Cultural normativeness as a moderator of the link between physical discipline and children's adjustment: A comparison of China, India, Italy, Kenya, Philippines, and Thailand. *Child Development*, 76, 1234–1246.
- Lansford, J.E., & Dodge, K.A. (2008). Cultural norms for adult corporal punishment of children and societal rates of endorsement and use of violence. *Parenting: Science and Practice*, 8, 257–270.
- Larzelere, R.E. (2000). Child outcomes of nonabusive and customary physical punishment by parents: An updated literature review. *Clinical Child and Family Psychology Review*, 3, 199–221.
- Larzelere, R.E., Klein, M., Schumm, W.R., & Alibrando, S.A. (1989). Relations of spanking and other parenting characteristics to self-esteem and perceived fairness of parental discipline. *Psychological Reports*, 64, 1140–1142.
- Lytton, H. (1990). Child and parent effects in boys' conduct disorder: A reinterpretation. *Developmental Psychology*, 26, 683–697.
- Maccoby, E.E. (1980). *Social development: Psychological growth and the parent-child relationship*. New York, NY: Harcourt Brace Jovanovich.
- Maccoby, E.E., & Martin, J.A. (1983). Socialization in the context of the family: Parent-child interaction. In P.H. Mussen & E.M. Hetherington (Eds.), *Handbook of child psychology: Vol. IV. Socialization, personality, and social development* (4th ed., pp. 1–101). New York, NY: Wiley.
- MacKinnon, D.P. (2008). *Introduction to statistical mediation analysis*. New York, NY: Erlbaum.
- McLoyd, V.C., & Smith, J. (2002). Physical discipline and behavior problems in African American, European American and Latino children: Emotional support as a moderator. *Journal of Marriage and the Family*, 64, 40–53.
- Muthén, L.K., & Muthén, B.O. (2009). *Mplus* (v. 5.2) [software]. Los Angeles: Muthén & Muthén.
- Patterson, G.R. (2002). The early development of coercive family process. In J.B. Reid, G.R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 25–44). Washington, DC: American Psychological Association.
- Rohner, R.P. (1986). *The warmth dimension: Foundations of parental acceptance-rejection theory*. Thousand Oaks, CA: Sage.
- Rohner, R.P. (2005). Parental Acceptance-Rejection Questionnaire (PARQ): Test manual. In R.P. Rohner & A. Khaleque (Eds.), *Handbook for the study of parental acceptance and rejection* (4th ed., pp. 43–106). Storrs, CT: Center for the Study of Parental Acceptance and Rejection, University of Connecticut.
- Rohner, R.P., Bourque, S.L., & Elordi, C.A. (1996). Children's perceptions of corporal punishment, caretaker acceptance, and psychological adjustment in a poor, biracial southern community. *Journal of Marriage and the Family*, 58, 842–852.
- Rohner, R.P., & Britner, P.A. (2002). Worldwide mental health correlates of parental acceptance-rejection: Review of cross-cultural and intracultural evidence. *Cross-Cultural Research*, 36, 16–47.
- Rohner, R.P., Kean, K.J., & Courmoyer, D.E. (1991). Effects of corporal punishment, perceived caretaker warmth, and cultural beliefs on the psychological adjustment of children in St. Kitts, West Indies. *Journal of Marriage and the Family*, 53, 681–693.
- Rohner, R.P., Khaleque, A., & Courmoyer, D.E. (2005). Parental acceptance-rejection theory, methods, evidence, and implications. In R.P. Rohner & A. Khaleque (Eds.), *Handbook for the study of parental acceptance and rejection* (4th ed., pp. 1–35). Storrs, CT: Center for the Study of Parental Acceptance and Rejection, University of Connecticut.
- Rohner, R.P., Saavedra, J.M., & Granum, E.O. (1978). Development and validation of the Parental Acceptance-Rejection Questionnaire. *Catalog of Selected Documents in Psychology*, 8, 7–8.
- Sameroff, A.J., & Haith, M.M. (1986). *The five to seven year shift*. Chicago, IL: University of Chicago Press.
- Sheehan, M.J., & Watson, M.W. (2008). Reciprocal influences between maternal discipline techniques and aggression in children and adolescents. *Aggressive Behavior*, 34, 245–255.
- Siegler, R.S., & Alibali, M.W. (2004). *Children's thinking, 4th edition*. Upper Saddle River, NJ: Prentice Hall.
- Simons, R.L., Wu, C., Lin, K., Gordon, L., & Conger, R.D. (2000). A cross-cultural examination of the link between corporal punishment and adolescent antisocial behavior. *Criminology*, 38, 47–79.
- Straus, M.A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics Scale. *Journal of Marriage and the Family*, 41, 75–88.
- Weisz, J.R., Chaiyasit, W., Weiss, B., Eastman, K.L., & Jackson, E.W. (1995). A multimethod study of problem behavior among Thai and American children in school: Teacher reports versus direct observations. *Child Development*, 66, 402–415.
- Weisz, J.R., Suwanlert, S., Chaiyasit, W., & Walter, B.R. (1987). Over- and undercontrolled referral problems among children and adolescents from Thailand and the United States: The wat and wai of cultural differences. *Journal of Consulting and Clinical Psychology*, 55, 719–726.
- Weisz, J.R., Suwanlert, S., Chaiyasit, W., Weiss, B., Achenbach, T.M., & Eastman, K.L. (1993). Behavioral and emotional problems among Thai and American adolescents: Parent reports for ages 12–16. *Journal of Abnormal Psychology*, 102, 395–403.
- Whipple, E.E., & Richey, C.A. (1997). Crossing the line from physical discipline to child abuse: How much is too much? *Child Abuse and Neglect*, 21, 431–444.