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The Role of Maternal Emotion Regulation in Overreactive and Lax Discipline

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Abstract

The roles of cognitive reappraisal and expressive suppression as intentional methods mothers use to regulate their own emotion were investigated in relation to mothers' experience and expression of negative emotion and their overreactive and lax discipline practices. Eighty-two mothers of toddlers completed questionnaires that measured these constructs. Emotion regulation strategies were more consistently associated with overreactive than with lax discipline. More suppression in discipline encounters was associated with less overreactivity, an association partially mediated by expressed negative emotion. Reappraisal, both globally and in the context of discipline encounters, was inversely associated with overreactive discipline. The association of global reappraisal and overreactivity was mediated in parallel by experienced and expressed negative emotion. Surprisingly, global reappraisal, relative to reappraisal in discipline encounters, appears to have more consistent implications for mothers' emotion and parenting practices in discipline encounters. A reconceptualization of the nature of reappraisal in discipline encounters is suggested. The study is the first to systematically apply methods and concepts from the better-developed basic research literature on adults' emotion regulation to the domain of parenting.

Keywords

Emotion regulation; emotion; parenting; discipline; reappraisal; suppression

Research has repeatedly demonstrated the association of negative parental emotion with overly harsh/overreactive and lax/permissive discipline (e.g., Leung & Slep, 2006; Lorber & O'Leary, 2005), which are themselves replicably correlated dimensions of dysfunctional discipline practices (e.g., Arnold, O'Leary, Wolff, & Acker, 1993). Parents, to varying degrees, may play an active role in managing or shaping their own emotional responses in discipline encounters, consistent with emerging views of the cognitive self-regulation of parenting (Barrett & Fleming, 2011; Deater-Deckard, Sewell, Petrill, & Thompson, 2010). Yet, despite Dix's (1991) call 20 years ago for research on how parents regulate their emotions, research on how parents intentionally regulate or manage their emotion in discipline encounters and how these regulatory processes are associated with discipline practices does not yet exist.

Understanding the *processes* by which parents regulate their emotion during discipline encounters may shed light on important differences among parents. For example, one mother may be very angry despite multiple attempts to keep her emotion in check, whereas another mother may be similarly upset having made no such attempts. Likewise, one father may have employed emotion management techniques that successfully reduced his negative emotion, whereas another father may not have needed to use any techniques at all to remain calm. These differences in parental emotion regulation processes may impact discipline practices.

The present investigation was undertaken to advance the nascent study of discipline-related parental emotion regulation processes by linking to better developed basic research on volitional emotion regulation processes. The emotion regulation model of Gross and Thompson (2007) was drawn on as it is grounded in substantial research on adults that provides a strong basis to generate hypotheses related to parenting, and because it has also generated valid measurement strategies.

In the Gross/Thompson model, emotion regulation is defined as “processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (p. 275). Two of the five emotion regulation processes described by Gross and Thompson (2007) have received the lion’s share of empirical attention in the adult literature. *Cognitive reappraisal* (hereafter referred to as “reappraisal”) consists of thinking differently about an emotion-triggering event in order to manage emotion. For example, a person may reappraise a frightening situation as “exciting” in order to reduce fear. In contrast, *response modulation* refers to directly influencing experiential, expressive, and/or physiological responses associated with emotion. To illustrate, a person experiencing anger may make efforts to keep that anger from showing on her face. This sort of expressive *emotion suppression* (hereafter referred to as “suppression”) is the most commonly studied form of response modulation.

Psychometric work supports the construct validity of reappraisal and suppression in adults (Gross & John, 2003; Parkinson & Totterdell, 1999). Validity is further buttressed by experiments showing their distinct effects on expressive, experiential, and physiological components of emotion (see Gross, 1998). Reappraisal decreases the experiential and expressive components, but not the physiological component, of negative emotion. In contrast, suppression reduces the facial expression, but not the internal experience, of negative emotion (Gross, 1998). Moreover, suppression of negative emotion results in *greater* physiological responses (e.g., Roberts, Levenson, & Gross, 2008).

Correlational research further supports the distinct pattern of associations that reappraisal and suppression have with various indexes of adaptation. Reappraisal is generally associated with positive adaptation (e.g., less depression and anxiety, more positive emotion; Egloff, Schmukle, Burns, & Schwerdtfeger, 2006; Garnefski et al., 2002; John & Gross, 2004). Suppression, on the other hand, is largely associated with poorer adaptation in these and other areas (Campbell-Sills, Barlow, Brown, & Hoffmann, 2006; Ehring, Tuschen-Caffier, Schnulle, Fischer, & Gross, 2010; John & Gross, 2004).

How might reappraisal and suppression apply to discipline practices? Globally, “[f]ailures to regulate emotion adequately may lead parents to experience insufficient or excessive emotion or to express emotion in ways that are detrimental to children and to the coordination of parent and child behavior” (Dix, 1991; p. 9). More specifically, it may be that reappraisal impacts discipline via its effects on negative emotion. This possibility is suggested by the roles of negative emotion in overreactive and lax discipline (e.g., Leung & Slep, 2006), and of reappraisal in reducing the experience and expression of negative emotion (Gross, 1998). Parents who use more reappraisal may, as a result, experience and express less negative emotion when faced with challenging child behavior, and thereby exhibit less overreactive and lax discipline. To illustrate, a mother who finds herself getting angry at her toddler’s tantrum at the removal of a toy may consciously reappraise or reevaluate its cause to something benign (e.g., “I’m getting angry for nothing. He’s just behaving like a typical two-year-old.”) as a purposeful attempt to stave off her anger, leaving her in a calm state that promotes skilled discipline.

The role of suppression in discipline may be less straightforward. On one hand, suppression is ineffective in reducing the internal experience of negative emotion, and actually increases physiological reactivity (e.g., Roberts et al., 2008). Each of these factors is associated with overreactive discipline (e.g., Lorber & O’Leary, 2005). Moreover, suppression is associated in several studies with poorer adaptation across multiple measures of adjustment (e.g., John & Gross, 2004). From this perspective, parents who use more suppression may then exhibit greater overreactive, and perhaps lax, discipline. A mother who, for example, tries not to look upset at her toddler’s tantrum may still be roiling on the inside, undermining skilled discipline. On the other hand, suppression attempts do effectively “work” to decrease the expression of negative emotion (e.g., Richards & Gross, 1999). Thus attempts to suppress negative emotion in discipline encounters may result in lower levels of overreactivity and laxness.

The above rationale gave rise to four hypotheses: It was hypothesized that greater reappraisal (in service of down-regulating negative emotion or up-regulating positive emotion) would be associated with lower levels of overreactive and lax discipline (Hypothesis 1), and that these associations would be mediated by the experience and expression of negative emotion (Hypothesis 2). It was further hypothesized that suppression (in service of down-regulating expressed negative emotion) would be associated with overreactive and lax discipline (Hypothesis 3). Hypothesis 3 is offered in a nondirectional manner, given the contrasting rationale presented in the previous paragraph. Lastly, it was hypothesized that the associations of suppression and discipline would be mediated by the expression of negative emotion (Hypothesis 4).

The above hypotheses were evaluated for both global measures of emotion regulation and those based on parent-child discipline encounters. This enabled the examination of whether emotion regulation-discipline relations could be attributed to parents’ general style of emotion regulation or tactics selectively used by parents in discipline encounters. On one hand, discipline may be a subset of broader behavioral patterns (e.g., Casillas, 2005). From this perspective, parents who use more reappraisal and suppression in general might also use these strategies more in discipline encounters. Thus, one might expect similar associations

of discipline with global and discipline-specific emotion regulation processes. On the other hand, parents may adapt their emotion regulation strategies to the task at hand. To illustrate, a parent who relies on reappraisal at work when confronted by a hostile supervisor (e.g., “Maybe I’m getting upset for nothing. She was short with me because she’s under deadline, not because she hates me.”) may or may not use a similar strategy when her child later than night throws a tantrum because he wants a cookie. If so, the emotion regulation strategies used in general may not be associated with the ones used in discipline encounters – they may then show different patterns of association with discipline.

Method

Participants

Eighty-two mothers of toddlers ($M = 29.28$, $SD = 7.43$ mos old; 31 of them female) completed questionnaires mailed to their homes. The mothers were recruited by: (1) contacts to parents in the “infant participant pool” database of a Midwestern university, generated from public birth records, (2) flyers placed in nursery schools and preschools, as well as in medical and psychiatric clinics, and (3) letters sent to parents of children enrolled in a university preschool and parents of children in a preschool mental health program. Participating mothers were 33.90 ($SD = 4.67$) years old; 58% worked at least part-time, 12.2% were students, and 59.8% had at least some college (29.3% with graduate or professional degrees). The annual family income distribution was as follows: 2.5% below \$20,000, 33.3% between \$20,000 and \$59,000, 28.4% between \$60,000 and \$99,000, and 35.8% above \$100,000. The mothers were African-American (58.5%), Caucasian (37.8%), Pacific Islander (2.4%), and Native American (1.2%); 2.4% were Latina. Most (82.9%) were married, 9.8% were unmarried but cohabiting with a partner, 3.6% were divorced or separated, and 3.7% were single.

Measures

Global emotion regulation—Parents completed the 10-item Emotion Regulation Questionnaire (ERQ; Gross & John, 2003), a valid self-report measure of individuals’ typical use of reappraisal (e.g., “When I want to feel less negative emotion, I change the way I’m thinking about the situation”; 6 items) and expression suppression (e.g., “When I am feeling negative emotions, I make sure not to express them”; 4 items) emotion regulation strategies in their daily lives. Item (rated on a 7-point scale; 1 = “strongly disagree” to 7 = “strongly agree”) average scores for the Reappraisal ($\alpha = .87$) and Suppression ($\alpha = .69$) scales were analyzed.

Discipline-specific emotion regulation—Parents completed the Parental Emotion Regulation Inventory (PERI), a 13-item study specific measure of reappraisal (e.g., “I change how I’m thinking about my child’s behavior to feel less negative emotion [e.g., anger, sadness].”) and suppression of negative emotion (“I try not to show my negative emotions.”) in discipline encounters (see on-line material). Mothers rated their use of several strategies to limit their experience and expression of negative emotion, and enhance their experience and expression of positive emotion when faced with child misbehavior; rated on a 7-point scale (1 = “I never do this” to 7 = “I very often do this”). The items closely reflect

the reappraisal and suppression items on the ERQ, to reflect the same constructs as the ERQ, but in discipline encounters.

Factor analysis of the PERI strongly suggested distinct reappraisal and suppression item subsets within this study specific instrument. The items were analyzed via a scree plot and principal axis factoring. Visual analysis of the scree plot suggested a two-factor solution, with the first factor (reappraisal) explaining 41.23% of the variance and the second factor (suppression) explaining 18.01% of the variance. Varimax rotated loadings ranged from .50 to .86 ($M = 0.74$) for items on the reappraisal factor, and from .36 to .75 ($M = 0.60$) for items on the suppression factor. Two items on the reappraisal factor exhibited cross-loadings in excess of .30 (.34 and .40) on the suppression factor and were thus subsequently eliminated from the reappraisal measure. The factor analysis was repeated and Varimax rotated loadings ranged from .74 to .87 ($M = .80$) for items on the trimmed reappraisal factor, and from .38 to .74 ($M = 0.60$) for items on the suppression factor, with minimal cross-loadings ($M = .10$). The trimmed reappraisal (6 items; $\alpha = .92$) and suppression (5 items; $\alpha = .74$) items were each averaged.

Discipline-specific negative emotion expression—Parents completed a version of the 16-item Berkeley Expressivity Questionnaire (BEQ; Gross & John, 1997), modified to reflect parents' emotional expression when faced with child misbehavior (i.e., "When my child in focus misbehaves or does something I don't like."). Each item is rated from 1 = "strongly disagree" to 7 = "strongly agree." Items from the 6-item negative expressivity scale (e.g., "People can easily see the negative emotions I am feeling.") were averaged ($\alpha = .66$).

Discipline-specific negative emotion experience—Parents completed a version of the 20-item Positive and Negative Affect Scale (PANAS). The PANAS (Watson, Clark, & Tellegen, 1988), modified to refer to "how you feel when your child misbehaves or does something you do not like." Each item is rated from 1 = "very slightly or not at all" to 5 = "extremely." Items from the 10-item negative expressivity scale (e.g., "Hostile") were averaged ($\alpha = .86$).

Discipline—Item averages from the 10-item Overreactivity ($\alpha = .79$) and 11-item Laxness ($\alpha = .74$) subscales (answered on a 7-point scale) of the widely used Parenting Scale described and validated by Arnold et al. (1993) were analyzed.

Results

Global reappraisal was inversely associated with overreactivity and laxness (Table 1). Discipline-specific reappraisal was inversely associated with overreactivity. These findings were consistent with Hypothesis 1. In contrast, laxness and discipline-specific reappraisal were not reliably associated. Mediation hypotheses were tested via the empirical distribution of indirect effect (z') method of MacKinnon, Lockwood, Hoffmann, West, and Sheets (2002). The global reappraisal-overreactivity relation was partially mediated by negative emotion expressed ($z' = 2.16, p < .05$) and experienced ($z' = 1.73, p < .05$) in discipline encounters, each evaluated individually, and consistent with Hypothesis 2. Partial mediation

in each case raised the possibility that variation not accounted for by emotion expressivity might be accounted for by emotion experience and vice versa; a possibility supported by the results of post-hoc path analyses. Overreactivity was simultaneously regressed on global reappraisal, as well as expressed and experienced negative emotion, which were in turn regressed on global reappraisal. Indirect effects from global reappraisal to overreactivity were significant for negative emotion expression ($z' = -1.94, p < .05$) and experience ($z' = -1.59, p < .05$).

Reappraisal in discipline encounters was not significantly associated with either the experience or expression of negative emotion. Thus, the mediational hypotheses (2) were not supported for mothers' discipline-specific reappraisal.

Exploratory analyses were conducted in an attempt to gain insight as to why a) global reappraisal was associated with discipline-specific reappraisal, b) both reappraisal measures were correlated with overreactivity, yet c) discipline-specific reappraisal did not predict emotion, as did global reappraisal. The partial correlations of discipline-specific reappraisal with the expression ($r_p = .11$) and experience ($r_p = .14$) of negative emotion, as well as with overreactivity ($r_p = -.06$), controlling for global reappraisal, were all nonsignificant. In contrast, partial correlations of global reappraisal with these same variables, controlling for discipline-specific reappraisal, were all significant at $-.35$ ($p = .002$) for negative emotion expression, $-.28$ ($p = .012$) for negative emotion experience, and $-.25$ ($p = .029$) for overreactivity. Thus, to the extent that discipline-specific reappraisal predicted overreactivity, it was due to its shared variation with global reappraisal. In contrast, global reappraisal predicted unique variation in emotion and discipline that was not related to discipline-specific reappraisal.

Turning to suppression, only discipline-specific suppression was reliably associated with (less) overreactive discipline. Negative emotion expressivity mediated this association ($z' = 2.30, p < .05$). These findings were consistent with Hypotheses 3 and 4. However, in no other case was either global or discipline-specific suppression associated with discipline, thus overall support for Hypotheses 3 and 4 was limited.

Finally, laxness was not significantly associated with either emotion expression or experience. Thus neither Hypotheses 2 nor 4 were supported for lax discipline.

Discussion

The present results indicate that mothers who make more active efforts to manage their emotions tend to use less overreactive and/or lax discipline. However, patterns for reappraisal and suppression differed to some extent. The present findings suggest that the global use of reappraisal in daily life may influence overreactive discipline by simultaneously dampening the expression and experience of negative emotion in discipline encounters. This finding is consistent with studies showing that global reappraisal reduces both the experience and expression of negative emotion (Gross, 1998), and with prior associations of global reappraisal with positive adaptation across multiple domains of functioning (e.g., John & Gross, 2004).

The results on discipline-specific reappraisal presented an interpretive challenge. Global and discipline-specific reappraisal were strongly correlated and each predicted overreactivity. However, only global reappraisal predicted mothers' emotion in discipline encounters. The results of exploratory analyses suggested that reappraisal in discipline encounters did not contribute to either emotion or overreactivity after controlling for global reappraisal. Instead, the reverse was true: Global reappraisal predicted overreactivity over and above that predicted by discipline-specific reappraisal. It may be that the global use of reappraisal is a marker of an automatic process that impacts parents' emotion and discipline. Higher levels of global reappraisal predict greater prefrontal cortex and less amygdala activity (e.g., Drabant, McRae, Manuck, Hariri, & Gross, 2009). These brain regions are pivotal in emotion, executive control, and social behavior, and implicated in parenting (Barrett & Fleming, 2011). It may be that such neural processes occur automatically during discipline encounters in the parent who characteristically uses reappraisal to regulate her emotions. They may directly impact the parent's emotional state and behavior without the necessity of her employing volitional reappraisal strategies while she is trying to manage her child's behavior. Discipline encounters move very quickly and a relatively elaborated process like reappraising the meaning of a child's behavior may not have as much relevance there as it does in other situations. If this explanation is correct, the present mothers may have simply described their use of discipline-specific reappraisal to be consistent with their reports of typical reappraisal use, thus explaining their association. Alternatively, reports of discipline-specific reappraisal may have reflected "after the fact" emotion regulation.

Turning to laxness, greater global reappraisal was associated with lower laxness, similar to its association with overreactive discipline. However, the mechanism to which this can be attributed is less clear. Although mothers who used more reappraisal in their everyday lives used less lax discipline and experienced and expressed less negative emotion in discipline encounters with their toddlers, their lower level of laxness was not a function of emotion. The greater executive control marked by the habitual use of reappraisal, perhaps mediated by greater prefrontal cortical activity (Drabant et al., 2009), may explain why global reappraisal was associated with laxness. There is growing recognition of the important role of executive control in parenting (Barrett & Fleming, 2011; Deater-Deckard et al., 2010). The clear and consistent enforcement of rules when challenged with a misbehaving child doubtlessly requires significant executive control, perhaps inhibition of prepotent responses (e.g., suppressing the urge to "give in" to terminate a child's whining). Greater global use of reappraisal may characterize mothers who are particularly skilled at such executive control of parenting.

Mothers who are more lax also often exhibit higher levels of overreactive discipline – a pattern that replicated in the present research. Nonetheless, emotion regulation was not broadly predictive of laxness as it was of overreactivity, nor were expressed or experienced emotion. Laxness is less often studied than overreactivity. However, there are now three investigations of laxness and emotion of which the author is aware. Together, the present findings and those of two other studies (Leung & Slep, 2006; Lorber & Slep, 2005) suggest inconsistent emotion-laxness relations at best. Emotion regulation may be less relevant for lax than overreactive discipline because emotion is itself less relevant for lax than overreactive discipline.

A different pattern of associations was found for suppression than for reappraisal. The present results suggest that mothers who attempted to suppress their emotion expression often succeeded, resulting in less overreactivity, but not less laxness. Although discipline encounters with toddlers may move too quickly for more elaborated emotion regulatory processes like reappraisal, the direct suppression of negative expressions may be more feasible given the task demands.

Furthermore, a degree of situational specificity in suppression was suggested. Mothers' global suppression did not reliably predict their use of suppression in discipline encounters, nor did it predict their discipline behavior. Thus suppression appears to be selectively employed in, and selectively relevant to, discipline encounters in comparison to other contexts. This is consistent with theory and emerging findings suggesting that situational demands shape regulation strategies (e.g., Egloff et al., 2006; Ehring et al., 2010). To illustrate, "blowing-up" at a boss may be less situationally appropriate and more personally costly than blowing-up at one's child, resulting in the suppression of negative emotion being used more when at work than when parenting.

Suppression in the present study behaved in some ways like suppression in prior research (e.g., associated with less expression but not experience of negative emotion). However, although greater suppression was associated with maladjustment in prior studies (e.g., Campbell-Sills et al., 2006), suppression in the present study was associated with lower overreactivity (i.e., better functioning). Parental expressive suppression may ultimately be "good" for children. Yet it may also come at a cost for the parent. Suppression results in increased autonomic responses (e.g., Roberts et al., 2008), which are themselves risk factors for cardiovascular disease (e.g., Matthews et al., 2004). Accordingly, a parent may succeed in suppressing her expression of negative emotion during discipline encounters, and do a better job managing her child's misbehavior as a result. However, she may pay a personal health penalty for doing so.

Four limitations of the design are important to note. First, only broad classes of emotion regulation were measured. This choice reflected a "top down" attempt to link to well developed theory and measurement strategies from research on adults' emotion regulation. The upside to this practice is that the results are highly interpretable relative to prior research and theory. The downside is that one cannot say exactly *what* it is that less overreactive and lax mothers did differently from others (e.g., slowly counting to 10). Future research would benefit from including "bottom up" measures of specific emotion regulation strategies that parents spontaneously generate, in addition to asking them to describe their typical regulatory behaviors.

Second, maternal emotion regulation in discipline encounters was measured with a study specific measure (the PERI) that does not have established psychometric properties beyond the present report. With interpretive caution due to the relatively small *N*, the PERI's factor structure was consistent with the presence of internally consistent underlying expressive suppression and cognitive reappraisal factors. There are no existing gold standard measures of parental emotion regulation in discipline encounters to benchmark the PERI's performance against. However, scores on the PERI's suppression factor were associated

with expressed, but not experienced emotion, in a manner consistent with experimental research on the effects of suppression (Gross, 1998). Moreover, suppression was associated with overreactive discipline. Thus, the present findings may be viewed as preliminary support for the new suppression measure's reliability and concurrent validity. Its lack of significant association with the global emotion suppression construct measured by the established valid ERQ is somewhat more ambiguous, and could indicate either problems with the PERI or that parents use suppression differently in discipline encounters than they do in other aspects of their lives. The latter seems more likely because of the measure's coherent performance in relation to emotion and discipline. In contrast, the PERI's discipline-specific reappraisal subscale was strongly correlated with the ERQ's global reappraisal scale. Yet its validity is questionable in its lack of significant association with either experienced or expressed emotion, as would be expected from the experimental literature on the effects of reappraisal (Gross, 1998). Other concerns about its construct validity are articulated above.

The third main limitation is the reliance on self-report. Where some aspects of emotion and its regulation are concerned, self-report may be necessary (e.g., intentional strategies and internal experiences). However, other emotion constructs (e.g., emotion expression), as well as discipline, can be measured objectively in future research to reduce reporting bias, shared method variance, and the limits of self awareness that are native to self-report.

The fourth principal limitation is the cross-sectional design. The mediation models reflect the theoretical causal relations among emotion, emotion regulation, and parenting, and the results can only be said to be consistent with these models, rather than "proving" directionality. Clearly experimental and prospective designs will be necessary to make stronger causal inferences.

Notwithstanding the above limitations, the present study is novel, theoretically driven, and yielded results that highlight the important role of emotion regulatory processes in discipline and suggest several avenues for future research. Moreover, to the author's knowledge, it is the first to systematically apply methods and concepts from the better-developed basic research literature on adults' emotion regulation to the domain of parenting. There is great enthusiasm for the role of emotion regulation in parenting, and in family psychology more broadly (e.g., McNulty & Hellmuth, 2008), yet there is certainly no consensus among family psychologists on its definition and measurement. There is likely much to be gained by linking to the basic research on emotion regulation in terms of clarifying what emotion regulation is (e.g., one construct vs. a collection of processes), how to measure it, how it can be expected to relate to other constructs of interest (e.g., emotion, social behavior), and how its findings may be interpreted. The present article illustrates one, but certainly not the only possible, approach to linking family processes to basic science on emotion regulation. It may thus be of interest to family psychologists across a broad spectrum of interests.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Table 1

Correlations Among Study Constructs

	1	2	3	4	5	6	7	8
1. Global reappraisal	-							
2. Global suppression	.06	-						
3. Discipline-specific reappraisal	.58***	-.07	-					
4. Discipline-specific suppression	.37***	.16	.22	-				
5. Negative emotion expression in discipline encounters	-.35***	-.32**	-.11	-.47***	-			
6. Negative emotion experience in discipline encounters	-.24*	-.03	-.05	.00	.29**	-		
7. Overreactive discipline	-.33**	.07	-.24*	-.32**	.39***	.35**	-	
8. Lax discipline	-.25*	.07	-.22	.04	.06	-.05	.40***	-
<i>M</i>	5.08	2.47	4.26	3.41	4.17	2.00	2.30	2.38
<i>SD</i>	1.06	0.86	1.27	0.95	0.89	0.51	0.66	0.65
Minimum	1.50	1.00	1.00	1.00	2.17	1.20	1.10	1.00
Maximum	7.00	5.75	7.00	5.80	6.00	3.80	4.30	4.18

Note. One parent did not complete the Parenting Scale. Thus all correlations involving discipline practices are based on an *N* of 81. All other analyses are based on the full *N* of 82.

* $p < .05$.

** $p < .01$.

*** $p < .001$.