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Preschoolers' Emotion Knowledge and the Differential Effects of Harsh Punishment

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This study examined the influence of caregiver-reported harsh physical and verbal punishment on children's behavioral and self-system adjustment. Children's emotion knowledge was evaluated as a heretofore unrecognized moderator of these relations. We assessed 250 preschool-aged children (50% female; M_{age} = 49.06 months) from diverse backgrounds (50% Hispanic, 18% African American, 10.4% Caucasian, 21.6% multiracial/other) using various instruments through teacher, caregiver, self, and observer report in the domains of harsh punishment, conduct problems, self-concept, and emotion knowledge. Emotion knowledge moderated the relation between harsh punishment and child adjustment. Harsh physical punishment was associated with conduct problems for children with higher emotion knowledge, especially for boys. Harsh verbal punishment was associated with self-concept deficits among children with higher emotion knowledge, especially for girls. These relations were also specifically applicable to non-Hispanic children. These results highlight the importance of investigating hypothesis-driven interactive effects and the specificity of experience to understand the psychosocial sequelae of parenting practices broadly, and to clarify the mixed evidence in the punishment literature specifically. Clinical implications point to the salience of emotion processes in parent–child disciplinary interventions for understanding the prevalence and pattern of child behavioral adjustment and self-concept, as well as more broadly to the role of individual differences in children's responses to adversity and subsequent therapeutic needs.

Keywords: emotion knowledge, physical punishment, verbal punishment, harsh discipline

Decades of research and debate have centered on the impact of parental disciplinary styles on child development. Physical and verbal punishment have undergone cycles of praise and prohibition in concert with shifting evidence about their direct and indirect effects on child adjustment, and in recognition of their pervasiveness across varied contexts and backgrounds (Gershoff, 2002; Straus & Field, 2003). Although the preponderance of research shows that some authoritative control contributes to positive child outcomes (Steinberg, Lamborn, Dornbusch, & Darling, 1992), the literature on harsh punishment has been equivocal. A large meta-analysis of corporal punishment revealed deleterious short- and long-term effects on child adjustment and the parent–child relationship (Gershoff, 2002). Similarly, harsh verbal punishment is often associated with negative outcomes (Berlin et al., 2009; Solomon & Serres, 1999). Yet there is considerable variation across studies, with some data suggesting that punishment is associated with neutral or positive developmental outcomes in particular contexts or for particular individuals (Lansford et al., 2005; McLoyd & Smith, 2002; Smith & Brooks-Gunn, 1997). Beyond ethnicity, however, studies have not adequately examined factors that may moderate the impact of harsh punishment. Further, little research has clarified the unique influences of types of punishment on adaptation in multiple domains. Therefore, the present study examined (a) the correlates of harsh physical and verbal punishment in a single sample with respect to both behavior problems and self-concept, and (b) the role of emotion knowledge (i.e., the capacity to identify and articulate feeling states in others) as a moderator of expected relations between harsh punishment and child adjustment.

Harsh Punishment and Child Adjustment

In this investigation, harsh physical punishment referred to instances in which the caregiver used a hand or object for the purpose of discipline within average expectable limits, such that it did not meet the criteria for physical abuse (Cicchetti & Valentino, 2006). Similarly, harsh verbal punishment included yelling or cursing at the child (Straus, 1979), but did not include belittling or denigrating the child, as would typify emotional abuse (Glaser, 2002). Harsh punishment, though more severe than other types of discipline (e.g., reasoning or redirecting), falls short of abuse because it is culturally normative, does not contain injurious levels of force and/or direct attacks on sense of self, and is used in a disciplinary context (i.e., when a child has misbehaved).

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Harsh punishment is pervasive across all types of families in both physical (Straus & Stewart, 1999) and verbal forms (Straus & Field, 2003). Despite its universality, however, reviews have consistently identified primarily negative effects of harsh punishment (e.g., Berlin et al., 2009; Gershoff, 2002; Solomon & Serres, 1999; Straus, 1994). Gershoff's (2002) meta-analysis demonstrated that harsh physical punishment negatively influenced the parent–child relationship and adjustment in both childhood and adulthood. Specifically, significant effects of corporal punishment were found in all 11 areas tested, including aggression, delinquency, and psychopathology. Further, short-term behavioral gains as a function of corporal punishment were not associated with long-term benefits. For example, physical punishment was positively related to immediate child compliance, but it did not have long-term positive effects on children's moral internalization of rules (Gershoff, 2002). Similarly, harsh verbal punishment has been associated with maladaptation in numerous domains, including aggression, cognitive development, self-concept, and achievement (Berlin et al., 2009; Solomon & Serres, 1999).

Although rarely examined in the same study, preliminary data suggest that physical and verbal punishment may have unique developmental effects. For example, Berlin and colleagues (2009) found that, despite wide-ranging concurrent effects, physical, but not verbal, punishment in toddlerhood predicted child aggression over time. In another study, Solomon and Serres (1999) found that verbal, but not physical, punishment in middle childhood was associated with poor self-concept and achievement. Although these differences may, in part, reflect the different age groups sampled, findings are consistent with patterns observed in maltreatment research, wherein physical abuse is disproportionately associated with conduct outcomes, but emotional abuse is associated with self-concept and subjective distress (Gross & Keller, 1992; Mullen, Martin, Anderson, Romans, & Herbison, 1996). Although our study takes care to define harsh punishment as a separate construct from child maltreatment, both experiences represent parental acts of negativity toward the child that may share related developmental sequelae and pathways.

Building on these suggestive findings, the current investigation examined the association between harsh physical and verbal punishment and preschoolers' behavior problems and self-concepts in a single sample of same-aged preschoolers. Based on initial findings from studies of harsh punishment, and parallel relations in the maltreatment literature, we predicted that physical punishment would relate to child behavior, whereas verbal punishment would relate to self-concept.

Moderating Influences on the Effects of Harsh Punishment

Despite the preponderance of research on the negative effects of harsh punishment, these effects are far from unilateral, and some researchers remain resolute in their assertion that harsh punishment has positive effects (Larzelere, 2000). Putative moderators may correspond to the form and context of the punishment itself (Larzelere & Kuhn, 2005), but also may include societal, child, or parent factors. Cultural norms about the appropriateness of harsh punishment are a central determinant of its impact on children's adjustment. Research spanning several nations suggests that child outcomes of harsh punishment were determined more by the normativeness of the disciplinary strategy in a culture than being specific to any particular culture (Lansford et al., 2005). Similarly, studies have shown that sociocultural attitudes, such as the perceived fairness of punishment (Rohner, Bourque, & Elordi, 1996), as well as societal status variables, such as socioeconomic status (Baldwin, Baldwin, & Cole, 1990), influence quantitative and qualitative relations between harsh punishment and child outcomes.

Research on moderating factors has often evaluated demographic variables such as ethnicity, age, and sex. Although harsh punishment results in varying effects across children from different ethnic groups, specific findings have been mixed. Some data suggest that both harsh physical and verbal punishment have a positive impact on cognitive development among Hispanic toddlers (Berlin et al., 2009), but other findings suggest that preschool-age Hispanic children may be more vulnerable to the negative effects of physical punishment on child behavioral adjustment (McLoyd & Smith, 2002). Additional evidence suggests that physical punishment over the first 5 years of life is detrimental for White American children, but is relatively positive for Black American children (Lansford et al., 2004). Variable relations between punishment effects and age were addressed by Gershoff (2002) in the aforementioned meta-analysis. Age evidenced a curvilinear relation with punishment, such that middle school children showed more negative effects of punishment than preschool-, grade school-, or high school-aged children. Finally, research on the influence of child sex (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Smith & Brooks-Gunn, 1997) has been similarly variable. Studies have found that 3-year-old girls display more negative effects than 3-year-old boys (Smith & Brooks-Gunn, 1997); that boys of all ages evidence more negative effects than girls (Gershoff, 2002); and that preschool-aged girls and boys show comparable outcomes following maternal punishment, though boys are more negatively affected by paternal punishment (Chang et al., 2003). Together, these findings point to a lack of empirical clarity regarding when and how child factors moderate the effects of harsh punishment.

Beyond interactive associations between harsh punishment and demographic factors, studies have identified several process variables that influence the association between punishment and child adjustment. Some of these process variables speak to the importance of the child's perception of and attributions about the punishment experience for understanding its impact on children's adjustment. For example, supportive and responsive caregiving mitigates the negative effects of harsh punishment on children's problem behavior (Berlin et al., 2009; McLoyd & Smith, 2002), which may indicate that children perceive punishment in this context as appropriate and caring, rather than harsh and insensitive. In addition, children's social information-processing style may influence the relation between harsh punishment and child aggression. In a study of kindergarteners, children's perception of punishment as malicious was related to more negative outcomes (Weiss, Dodge, Bates, & Pettit, 1992). Building on these findings, Fine, Trentacosta, Izard, Mostow, & Campbell (2004) examined children's perception of anger as a possible mediator of the relation between harsh punishment and conduct problems in middle childhood. Although their findings did not support mediation, children's anger perception was related to their behavioral outcomes. Thus, we suggest that the child's propensity to perceive

anger may alter the meaning of experienced punishment, and, in turn, its relation to subsequent maladjustment and aggression. However, the relative dearth of research in this area demonstrates the need for greater attention to the emotional content and meaning of punishment for children. Therefore, the current study evaluated the role of children's emotion knowledge as a potential moderator of specific relations between caregiver-reported, harsh physical and verbal punishment and children's adjustment.

Emotion Knowledge as a Moderator of Experience

Emotion knowledge, encompassing capacities to discern and define emotional states (Denham, 1998), has demonstrated consistent links with adjustment (see Trentacosta & Fine, 2010, for review). Evidence from clinical, developmental, and social psychology points to emotion knowledge as an important moderator of experience (Davis & Humphrey, 2012; Douglas, Frink, & Ferris, 2004; Wang, 2008). Emotion knowledge may qualify the effects of harsh punishment on development because it constitutes a cognitive structure or schema through which children interpret and evaluate their experiences (Stein & Liwag, 1997). In addition to influencing evaluation, emotion knowledge also contributes to the clarity with which an event is remembered (Wang, 2008), and thus influences the impact of that experience on adaptive functioning. Despite strong theoretical support for the moderating role of emotion knowledge on the effects of childhood experiences, the present study was the first to evaluate children's emotion knowledge as a moderator of relations between harsh punishment and adjustment.

Emotion knowledge may be especially salient for qualifying the effects of harsh punishment because these disciplinary experiences tend to be relatively ambiguous stimuli for children (Strassberg, 1995). Thus, the child's capacity to interpret the emotional content of the punishment will influence her/his interpretation of the experience. Punishment is often accompanied by negative parental emotion (Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Smith & Brooks-Gunn, 1997; Spieker, Larson, Lewis, Keller, & Gilchrist, 1999). As such, children's capacities to identify and understand parents' negative emotions may influence how they will perceive and evaluate the meaning and fairness of the punishment, and, by extension, its effects on their later behavior and self-concept. For example, if a child is able to perceive parental anger that accompanies harsh punishment, he or she may be more likely to interpret the parent's behavior as punitive, unfair, or even abusive, rather than disciplinary. The idea that children's emotion knowledge may influence their interpretations of harsh punishment and its developmental effects is consistent with research showing that child maltreatment effects differ depending on the meaning made of the experience (Wright, Crawford, & Sebastian, 2007).

Study Overview

The current study drew on a large, multiethnic preschool sample to investigate the contributions of harsh physical and verbal punishment to children's behavioral adjustment and self-concept, as qualified by the child's emotion knowledge. We hypothesized that mothers' harsh punishment would be related to poorer adjustment among children with good emotion knowledge abilities (and by extension the ability to perceive the negative emotional content of the punishment). We expected that harsh punishment would be related to less negative adjustment among children with less well-developed emotion knowledge abilities (and thus less ability to perceive the negative emotional content of punishment). Consistent with prior specificity of observed relations between physical and verbal punishment and children's behavioral versus self-system adjustment (Berlin et al., 2009; Solomon & Serres, 1999), we expected harsh physical punishment to be more closely related to conduct outcomes, and verbal punishment to be more strongly related to children's self-concept. Finally, we evaluated potential child gender and ethnicity effects in light of the equivocal nature of the current literature in this area (Berlin et al., 2009; Gershoff, 2002; McLoyd & Smith, 2002; Smith & Brooks-Gunn, 1997).

Method

Participants

Participants were 250 preschool children and their primary caregivers who were living in Southern California. Participants were recruited via flyers posted in community-based child-development centers and preschool programs. Potential participants were screened by phone to ensure that the child was (a) between 3.9 and 4.6 years of age (mean age = 49.05 months, $SD = 2.91$), (b) proficient in English, and (c) not diagnosed with developmental disabilities or delays. The total sample was 50% female, 50% Hispanic, 18% African American, 10.4% Caucasian, 21.6% multiracial/other. Caregivers were primarily biological mothers (91.4%), with the exception of 3.6% foster/adoptive mothers and 5% grandmothers or other kin caregivers.

Procedure

Children and parents completed a 3-hr laboratory assessment and teachers completed questionnaires by mail approximately three months later. Teacher questionnaires were sent a minimum of one month following the child's entry into the teacher's classroom, so that the teacher had sufficient time to become familiar with their behavior. Laboratory assessments consisted of measures with the child, the parent, and the parent and child interacting, including formal assessments of IQ, play development, emotion knowledge, representation, and regulation. Families were compensated with $75 for their participation, the child received a small gift bag, and teachers were compensated with a $15 gift card upon return of the questionnaire packet. All procedures were approved by the human research review board of the participating university. Informed consent was obtained from the legal guardian at the time of the lab visit.

Measures

Verbal IQ. Verbal IQ was assessed with the Wechsler Preschool and Primary Scale of Intelligence–III (VIQ; Wechsler, 2002), consisting of a receptive vocabulary test (i.e., pointing at pictures to identify words) for children under 48 months, and an expressive vocabulary test (i.e., verbally explaining words) for children 48 months or older. The age-appropriate measure was used to compute a prorated verbal IQ score for each child ($M_{VIQ} = 96.89$, $SD = 15.55$).

Family socioeconomic status (SES). Family SES was scored using the Hollingshead Four-Factor Index of Social Status (Hollingshead, 1975), based on a composite of caregiver education and occupational status. Education codes ranged from one (less than 7th grade) to seven (graduate or professional training). Occupational scores ranged from one (farm laborers and unskilled service workers) to nine (executives and major professionals). Education codes were multiplied by three and occupation codes were multiplied by five. Scores were summed within caregiver and then averaged across caregivers (in cases with two caregivers in the home) to yield a total SES score. Scores in the sample ranged from 9 (e.g., unemployed with a 10th grade education) to 66 (e.g., an attorney with a graduate degree) with higher scores connoting higher SES (M_{SES} = 33.22, SD = 13.07, e.g., a licensed vocational nurse with a trade degree), and were sufficiently normally distributed (skewness = .328, kurtosis = −.536).

Harsh punishment. Parents reported their use of harsh physical and verbal punishment in the past year using the Corporal Punishment and Psychological Aggression scales of the Parent–Child Conflict Tactics Scale, Short Form, respectively (CTSPC-SF, Straus & Mattingly, 2007). Parents reported frequency of physical punishment on a 0–6 scale ranging from *Never* to *More than 20 times in the past year* for two items: "Spanked him/her on the bottom with your bare hand" and "Hit him/her on the bottom with something hard like a belt, a hairbrush, a stick, or some other hard object" (Range: 0–12, M = 2.85, SD = 2.51). Parents also reported harsh verbal punishment on two items: "Shouted, yelled, or screamed at him/her" and "Swore or cursed at him/her" (Range: 0–12, M = 4.20, SD = 2.50). Although Straus and Mattingly (2007) note that the short nature of the scales and the independence of the individual items preclude calculation of reliability, these composites demonstrate high concordance with the well-validated and widely used long form of the CTSPC ($r_{physical}$ = .86, r_{verbal} = .90), as well as similar construct validity to the long form.

Emotion knowledge. The Kuschè Emotional Inventory (KEI, Kuschè, 1984) assessed both recognition and labeling components of emotion knowledge (40 items each, shortened to 30 items each for the present study due to time constraints, with items most closely relating to primary emotions retained, e.g., sad, angry, surprised. The measure contained 20 negative and 10 positive emotion items). Emotion recognition was assessed by asking the child to select a target emotion from four line drawings of children expressing emotions (e.g., "Which boy/girl feels happy? Point to happy" α = .739). Emotion labeling was assessed by showing the child one line drawing and asking her/him to select the expressed emotion from four options (e.g., "Does this boy/girl feel happy, sad, angry, or scared?" α = .758). Labeling choices were repeated in reverse order to minimize the likelihood of the child consistently choosing the last option. We used the sum of the recognition and labeling tasks in these analyses ($r_{label\text{-}recog}$ = .677, $p < .001$).

Conduct problems. Teacher reports of child conduct problems were obtained using the externalizing behaviors scale of the Teacher Report Form: Ages 1.5 to 5 (TRF, Achenbach, 1991). This measure consists of 118 items rated by teachers as 0 (*not true*), 1 (*somewhat/sometimes true*), or 2 (*very true*). The externalizing behaviors subscale (α = .791) has 34 items (e.g., "Unpredictable and explosive behavior"). Observer reports of child conduct problems were obtained using the California Child Q-Sort (CCQ; Block & Block, 1980). Following administration of the 3-hr child assessment battery, examiners and independent observers rated the child on 100 personality descriptions (e.g., "Is obedient and compliant") using a forced choice distribution from 1 (*extremely uncharacteristic*) to 9 (*extremely characteristic*). Q-Sort methodology has demonstrated substantial reliability and validity even when conducted using very brief observations of behavior (Behrens, Parker, & Haltigan, 2011; Tarabulsy et al., 2009). Double-coded cases (48%) were averaged to yield a composite profile. The average intraclass correlation across the 100 CCQ items was .519 (SD = .231), which is comparable to or higher than other Q-sort studies, in which generally accepted reliability is in the .30 range (Kashdan, Sherman, Yarbro, & Funder, 2013; Nave, Sherman, & Funder, 2008).

Each profile was correlated with an expert-defined Q-sort profile of an "undercontrolled" child, and concordance values were used to represent each child's score on that construct. Positive concordance values captured a child with low ego control (i.e., undercontrolled, a tendency not to inhibit impulses) and negative concordance values captured a child with high ego control (i.e., overcontrolled, a tendency to contain or inhibit impulses even when it may not be adaptive to do so; Block & Block, 1980; Kremen & Block, 1998). Prior research has demonstrated the validity of the CCQ profiles in varied samples (see Block, 2008, for review).

Self-concept. Child reports of self-concept were obtained using the Self Description Questionnaire for Preschoolers (SDQP, Marsh, Ellis, & Craven, 2002). The SDQP consists of 38 items (e.g., "Can you run fast?" "Do you have lots of friends?"), rated *yes* or *no*, and a follow-up question for each: *sometimes or always/never?* The total self-perception score (α = .93) reflects the composite of subscales for athletic competence, appearance, peer acceptance, parent acceptance, verbal competence, and math competence. Observer ratings of child self-concept were obtained with the CCQ (as described earlier). Mean Q-sort profiles were correlated with an expert-defined Q-sort profile of a child with high self-concept (Waters, Noyes, Vaughn, & Ricks, 1985), with higher concordance values connoting higher observer ratings of child self-concept.

Results

Missing Data

Out of the total sample of 250 preschoolers, 15 were missing verbal IQ data, nine were missing SES data, 4 were missing punishment data, five were missing emotion knowledge data, and 12 were missing self-rated self-concept data. Further, out of the total sample of 250, 78 children did not have teacher-rated data on externalizing behavior problems (44 children were not in school, 27 teachers did not return questionnaires, and we could not obtain accurate school information for seven children). Children with teacher data did not differ significantly from those without on demographics, covariates, or punishment experience (χ^2_{gender} = .01, p = .93; $\chi^2_{ethnicity}$ = 3.35, p = .65; t_{SES} = .46, p = .65; t_{VIQ} = 1.98, p = .05; $t_{physicalpunishment}$ = −.58, p = .56; $t_{verbalpunishment}$ = −1.47, p = .14), however, children with teacher data had better emotion knowledge, t = 2.63, p = .01. The subsamples did not differ on observer-reported conduct problems, t = .33, p = .74. In order to use all available information to estimate regression pa-

rameters, models were analyzed using maximum likelihood estimation in Mplus Version 6.1 (Muthén & Muthén, 1998–2010).

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate relations are displayed in Table 1. All variables were sufficiently normal to render parametric statistics valid (Curran, West, & Finch, 1996). A multivariate analysis of variance (MANOVA) tested for mean differences by gender (Wilks' $\lambda = 2.858$, $p = .004$), ethnicity (Wilks' $\lambda = 1.767$, $p = .011$), and their interaction (Wilks' $\lambda = 1.355$, $p = .113$). Tests of between-subjects effects showed differences in verbal IQ ($F_{gender} = 8.527$, $p = .004$, female > male; $F_{ethnicity} = 6.774$, $p < .001$, Caucasian > Hispanic, $p = .006$, Other > Hispanic, $p = .003$); SES ($F_{gender} = 4.646$, $p = .033$, female > male); harsh verbal punishment ($F_{gender} = 4.196$, $p = .042$, male > female); teacher-rated externalizing behavior ($F_{gender} = 7.764$, $p = .006$, male > female; $F_{ethnicity} = 3.430$, $p = .019$, African American > Hispanic, $p = .007$), and observer-rated under control ($F_{ethnicity} = 3.530$, $p = .016$, African American > Hispanic, $p = .015$). There were no significant ethnic differences in either punishment or emotion knowledge. Given the differences, gender and ethnicity (effects coded, with multi/other as the base group) were included as covariates in all regressions. Follow-up analyses examined models separately by gender and ethnicity. Emotion knowledge was associated with lower externalizing and under control, and higher observer-rated self-concept. However, caregiver-reported harsh punishment was *not* related to adjustment, beyond a positive association between harsh physical punishment and observer-rated self-concept. *R* to *Z*–*r* transformations did not reveal gender differences in bivariate relations; however, the relation between SES and verbal IQ was larger for Caucasian ($r = .580$, $p = .004$) than for African American children ($r = -.022$, $p = .896$; $p_{difference} = .014$), and the correlation between caregiver-reported harsh physical punishment and emotion knowledge was larger for African American ($r = .353$, $p = .022$) than Caucasian children ($r = -.199$, $p = .350$; $p_{difference} = .035$), or multi/other children ($r = -.058$, $p = .671$; $p_{difference} = .043$).

Regression Analyses

Harsh physical punishment. Simultaneous linear regressions predicted each child-adjustment measure from emotion knowledge (centered), caregiver-reported harsh physical punishment (centered), and the interaction between centered predictors, controlling for verbal IQ, gender, ethnicity, and SES (see Table 2). Caregiver-reported harsh physical punishment was not associated with child-adjustment outcomes. In contrast, emotion knowledge was associated with fewer externalizing problems as reported by teachers, as well as less undercontrol and more positive self-concept as rated by observers. Although there were no main effects of harsh physical punishment, there was a significant interaction between emotion knowledge and harsh physical punishment for both teacher-reported externalizing ($\beta = .226$, $p = .001$, $R^2_{model} = .192$) and observer-reported undercontrol ($\beta = .148$, $p = .014$, $R^2_{model} = .132$), but not for the self-concept outcomes. As shown in Figure 1, caregiver-reported harsh physical punishment was associated with fewer teacher-reported externalizing problems for children with low emotion knowledge, but with more externalizing problems for children with high emotion knowledge.

Harsh verbal punishment. Linear regressions predicted each child adjustment measure from emotion knowledge (centered), caregiver-reported harsh verbal punishment (centered), and the interaction between the centered predictors, controlling for verbal IQ, gender, and socioeconomic status (see Table 3). A main effect emerged for harsh verbal punishment and teacher-rated externalizing, but not for self-concept. Again, emotion knowledge was associated with fewer externalizing problems as reported by teachers, as well as less undercontrol and more positive self-concept as rated by observers. The interaction between emotion knowledge and caregiver-reported harsh verbal punishment explained significant variance in self-, but not observer-, rated self-concept ($\beta = -.160$, $p = .014$, $R^2_{model} = .088$). The interaction was not significant for teacher-rated externalizing, but it was for observer-rated undercontrol ($\beta = .121$, $p = .044$, $R^2_{model} = .131$). As shown in Figure 2, for children with lower emotion knowledge, harsh verbal punishment was not associated with self-concept, but children with higher emotion knowledge reported less positive self-concept as a function of harsh verbal punishment.

Gender-specific effects. Each regression was run separately for girls and boys. For harsh physical punishment, main effects in all regressions were comparable for boys and girls, but the interaction between emotion knowledge and caregiver-reported harsh physical punishment was significant only for boys

Table 1
Descriptive Statistics and Bivariate Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	*n*	Range	Mean	*SD*
1. Harsh physical punishment	—	.467***	.101	.055	.141*	−.048	−.042	−.015	.154*	246	0–12	2.846	2.510
2. Harsh verbal punishment		—	.123	.165*	.078	.107	.103	−.079	.019	246	0–12	4.195	2.500
3. Emotion knowledge			—	.538***	.182**	−.267***	−.166**	.032	.463***	245	28.7–113	77.204	13.874
4. Verbal IQ				—	.231***	−.164*	−.025	.054	.336***	235	53–155	96.885	15.548
5. Socioeconomic status					—	−.055	.018	−.058	.182**	241	9–66	33.22	13.069
Conduct problems													
6. Teacher-rated externalizing behaviors						—	.421***	−.009	−.143	172	0–57	9.850	13.131
7. Observer-rated under control							—	.059	−.008	250	−.595–.669	.086	.294
Self concept													
8. Self-rated self-concept								—	.148*	238	64–190	165.706	23.764
9. Observer-rated self-concept									—	250	−.408–.615	.250	.256

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

Table 2
Simultaneous Regression Models Predicting Adjustment from Harsh Physical Punishment and Emotion Knowledge

Adjustment outcome	Conduct problems (teacher-rated)		Conduct problems (observer-rated)		Self-concept (self-rated)		Self-concept (observer-rated)	
	β	*p*	β	*p*	β	*p*	β	*p*
Verbal IQ	−.076	.420	.027	.722	.011	.894	.103	.167
Socioeconomic status	.007	.918	.035	.575	−.089	.180	.075	.220
Gender	−.138	.051	−.099	.096	.167	.008	.091	.115
African American	.105	.252	.073	.356	.006	.939	.041	.587
Hispanic	−.207	.020	−.231	.002	−.114	.167	.014	.850
Caucasian	.004	.970	.051	.549	.067	.461	−.024	.770
Emotion knowledge (EK)	−.247	.003	−.188	.007	.016	.838	.404	<.001
Harsh physical punishment	−.033	.654	−.042	.494	.007	.915	.109	.060
Punishment × EK interaction	.226	.001	.148	.014	.008	.909	.007	.902

($\beta_{\text{teacher-externalizing}} = .238$, $p = .009$, $R^2_{\text{model}} = .288$). For harsh verbal punishment, interactions between emotion knowledge and caregiver-reported harsh verbal punishment on self-rated self-concept ($\beta = -.258$, $p = .006$, $R^2_{\text{model}} = .086$) and observer-rated undercontrol ($\beta = .233$, $p = .007$, $R^2_{\text{model}} = .197$) were significant only for girls.

Ethnicity-specific effects. Given effects of being Hispanic, specifically, in several models, each regression was run separately for Hispanic and non-Hispanic children. Although main effects in all regressions were comparable across ethnicities, the interaction between emotion knowledge and caregiver-reported harsh physical punishment was significant only for non-Hispanic children ($\beta_{\text{teacher-externalizing}} = .436$, $p < .001$, $R^2_{\text{model}} = .314$; $\beta_{\text{observer-undercontrol}} = .311$, $p < .001$, $R^2_{\text{model}} = .197$). Similarly, for harsh verbal punishment, main effects were comparable, but the interaction between emotion knowledge and harsh verbal punishment predicting self-rated self-concept was significant only for non-Hispanic children ($\beta = -.279$, $p = .001$, $R^2_{\text{model}} = .187$).

Discussion

Consistent with prior research (Trentacosta & Fine, 2010), our findings showed that emotion knowledge was associated with fewer behavior problems and higher self-concept; however, there were surprisingly few main effects of caregiver-reported harsh punishment on adjustment. As hypothesized, harsh punishment had positive or neutral outcomes for children with poorer emotion knowledge, and negative adjustment outcomes for children with better emotion knowledge. In line with research on punishment (Berlin et al., 2009; Solomon & Serres, 1999) and maltreatment (Gross & Keller, 1992; Mullen et al., 1996), these interaction effects were evident when externalizing behavior was regressed on harsh *physical* punishment, and self-concept on harsh *verbal* punishment. Further, interactions with harsh physical punishment related to conduct outcomes for males, and interactions with harsh verbal punishment related to self-concept for females. Finally, significant interactions were found only among non-Hispanic children.

A vast body of literature has sought to understand the developmental sequelae of harsh punishment in childhood (see Gershoff, 2002; Larzelere, 1996, for reviews). Variable results have baffled researchers and fueled conflicting advice for practitioners, pediatricians, policymakers, and parents. This study highlights the critical importance of continued efforts to identify and clarify moderating influences on relations between parental discipline and child adjustment. Investigations of factors that account for qualitatively different developmental trajectories across individuals and

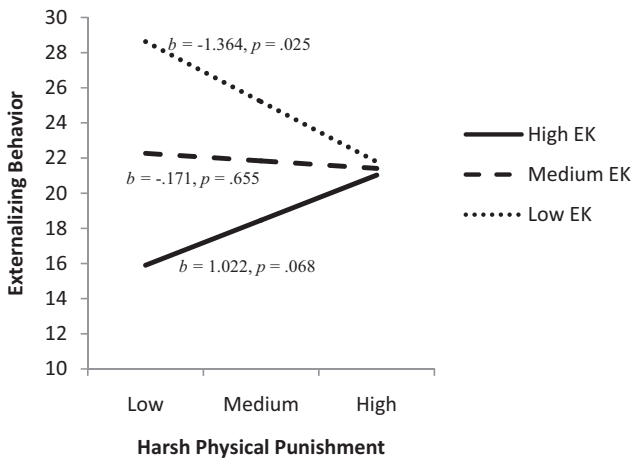

Figure 1. Emotion knowledge moderates the relation between harsh physical punishment and teacher-rated externalizing problems.

Table 3
Simultaneous Regression Models Predicting Adjustment From Harsh Verbal Punishment and Emotion Knowledge

Adjustment outcome	Conduct problems (teacher-rated)		Conduct problems (observer-rated)		Self-concept (self-rated)		Self-concept (observer-rated)	
	β	*p*	β	*p*	β	*p*	β	*p*
Verbal IQ	−.084	.387	.016	.833	.018	.819	.105	.162
Socioeconomic status	.013	.857	.031	.618	−.091	.160	.089	.140
Gender	−.152	.035	−.094	.119	.159	.011	.071	.222
African American	.176	.048	.104	.181	.012	.881	.042	.568
Hispanic	−.189	.042	−.215	.005	−.122	.132	.008	.914
White	−.052	.630	.013	.877	.080	.364	−.016	.843
Emotion knowledge (EK)	−.224	.009	−.201	.004	.042	.583	.418	<.001
Harsh verbal punishment	.098	.188	.094	.130	−.070	.274	−.041	.480
Punishment × EK interaction	.003	.967	.121	.044	−.160	.014	−.016	.788

contexts are essential for generating a cohesive understanding of development, and of the developmental consequences of harsh punishment in particular. Bronfenbrenner (1979) observed that, "in ecological research, the principle main effects are likely to be interactions" (p. 38), and advocated that interactive effects should be the focus of theoretically informed developmental inquiry (Bronfenbrenner & Morris, 1998). The present study is a testament to Bronfenbrenner's assertion that the full developmental story cannot be found in main effects alone.

These data suggest that emotion knowledge is a promising site for targeted investigations of the influence of child factors on experience. The interaction between caregiver-reported harsh punishment and emotion knowledge is consistent with the key role that emotion knowledge plays in the perception of affectively charged situations. Individual differences in emotion knowledge likely contribute to the differential perception of objectively similar punishment, which, in turn, influence its developmental consequences. Children's emotion knowledge may magnify the negative impact of harsh punishment on adjustment because it enhances the child' s perception of the negative parental affect that accompanies harsh discipline, and contributes to the child's perception of the punishment as unfair or frightening. This interpretation is consistent with previous research that indicates parent-level factors related to the emotional content of punishment can moderate the relation between punishment and outcomes (Berlin et al., 2009; McLoyd & Smith, 2002), as well as with research demonstrating a connection between children's processing of punishment situations and adjustment outcomes (Fine et al., 2004; Weiss et al., 1992). In addition, the impact of emotion knowledge remained after controlling for verbal IQ, suggesting that these findings reflect something specific to affective content, rather than greater general understanding of parental discipline. The association between higher levels of harsh punishment and less externalizing among children with lower emotion knowledge may reflect modestly positive, though potentially ephemeral, effects on compliance (Gershoff, 2002). The observed relations in our sample suggest that children with low emotion knowledge and low harsh punishment could potentially lack both the protective main effect of emotion knowledge and the moderately positive impact of parental discipline, albeit harsh, on behavior.

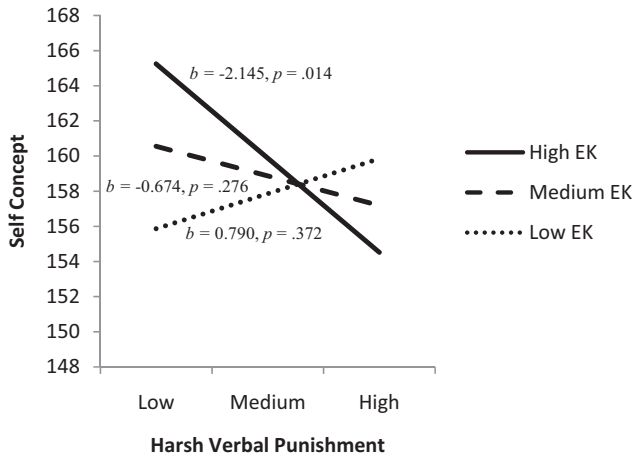

Figure 2. Emotion knowledge moderates the relation between harsh verbal punishment and self-rated self-concept.

It is notable that these data cannot establish the source of increased levels of emotion knowledge. Emotion knowledge is typically considered a child factor, but it is worth noting that it develops in the context of the caregiving relationship. This is particularly salient in the present investigation, as it may be that some children who experience harsh punishment become especially sensitive to emotional cues because of this experience (Pollak, Cicchetti, Homung, & Reed, 2000). Although harsh punishment was only marginally related to higher emotion knowledge in these analyses, it may be that this effect is present for some children or at some stages of development, whereas other children cope with harsh punishment by becoming less sensitive to emotional cues. Our data suggest that becoming sensitized to emotional cues may be a less adaptive coping mechanism in this context, and one that could potentially be addressed in a therapeutic setting. Alternatively, the punishment experiences of children with higher and lower emotion knowledge may not, in fact, be objectively similar, as presumed earlier. Children with higher emotion knowledge may have parents who are angrier when they use punishment than children with lower emotion knowledge. This may be part of the process by which children become sensitized to emotion recognition, and may explain their negative outcomes. These pathways warrant study in longitudinal paradigms that attend to the development of emotion knowledge. In addition, although the measure used in this study was not designed to examine positive and negative emotions separately, it remains to be seen whether

these findings are specific to knowledge about negative emotions, or emotions broadly.

Overall, our findings encourage greater academic and clinical attention to the emotional context of punishment, particularly given evidence that parental affect tends to be more intense in punishment situations (Pinderhughes et al., 2000; Smith & Brooks-Gunn, 1997; Spieker et al., 1999). These findings are consistent with Gershoff's (2002) assertion that children may be more likely to accept punishment when it is perceived as objective and planned, rather than emotional and impulsive. Increased attention to individual differences that may influence the development of behavior problems and self-concept is paramount to developing effective treatment protocols.

The form of punishment also contributed to the specificity of adjustment associations. When examining interactive effects, harsh physical punishment was more closely linked to conduct, and harsh verbal punishment to self-concept. These data suggest that children process these experiences differently, leading to distinct adaptive trajectories. This finding is consistent with prior research suggesting that physical punishment and/or physical abuse is uniquely tied to conduct, whereas verbal punishment and/or emotional abuse negatively affects the developing self system (Berlin et al., 2009; Briere & Runtz, 1990; Gross & Keller, 1992; Kent, Waller, & Dagnan, 1999; Mullen et al., 1996; Solomon & Serres, 1999). Replicating this specificity highlights the importance of attending to the type of punishment when targeting interventions.

Finally, these results provide further evidence for individual differences in developmental pathways. Males were disproportionately sensitive to the behavioral effects of harsh physical punishment, whereas females were more sensitive to the influence of harsh verbal punishment on self-concept. Although the sample size constrained our ability to test three-way interactions, gender moderation should be evaluated in larger samples. Our data suggest that some of the inconsistency regarding punishment effects in the extant literature may be related to the examination of nonequivalent experiences. For example, one study found greater negative effects of harsh punishment for girls with respect to outcomes in the cognitive domain (Chang et al., 2003), whereas Gershoff's (2002) meta-analytic findings suggest that boys evidenced more maladjustment in response to harsh discipline, at least in studies investigating conduct-related outcomes. These data are also consistent with suggestions that females may be particularly vulnerable to emotional abuse (Berzenski & Yates, 2010; Morimoto & Sharma, 2004).

With regard to ethnic differences, the current punishment literature remains equivocal, particularly with regard to the experience of Hispanic children (Berlin et al., 2009; McLoyd & Smith, 2002). Given that we did not find main effects of punishment for any group, we cannot draw conclusions regarding ethnic differences in punishment effects. However, the finding that moderation by emotion knowledge was only significant for non-Hispanic children may suggest that factors influencing the relation between punishment and adjustment differ across ethnic groups. Importantly, the absence of interactive effects among Hispanic children is consistent with our assertion that emotion knowledge may enhance children's sensitivity to the emotional negativity that often accompanies harsh punishment. Research suggests that emotional positivity may be especially important in Hispanic families given the value accorded to family ties, whereas parental criticism or negativity may not be associated with negative outcomes given cultural emphases on parental control and socialization (Halgunseth, Ispa, & Rudy, 2006; López et al., 2004). As such, emotion knowledge may not magnify the salience of harsh punishment for Hispanic children because the meaning of parental negativity is culturally contextualized. Understanding moderating mechanisms that qualify the impact of harsh punishment on development among Hispanic children remains an important area for future research. In addition, considerable variability in punishment processes and effects may be found in other ethnic groups. Future research should evaluate whether observed relations vary across specific groups beyond the broad distinction between Hispanic and non-Hispanic children, which we were limited to by the smaller representation of other ethnic groups in our current sample.

The present study is unique in its attention to multiple forms of harsh punishment and adaptation in the same sample, and is strengthened by the inclusion of multiple informants and methods to mitigate shared informant effects. Nevertheless, the present findings are qualified by a few notable limitations. First, punishment was measured by caregiver report. Although caregivers may have underreported their use of harsh punishment, this would have only attenuated our obtained effects. Further, given that the CTSPC is a widely used and well-validated measure, and the behaviors examined here fall well within the continuum of normative parenting, underreporting was unlikely. Importantly, given that maternal and paternal actions may have distinct effects (Chang et al., 2003), our findings are limited to the effects of maternal punishment. Additionally, the study would benefit from validation information regarding the use of an abbreviated KEI, as well as information on teachers' own demographic characteristics.

Second, teacher ratings of child externalizing behavior were not available for all participants. Although this subsample did not differ from those without teacher data on most variables, they did have significantly better emotion knowledge. Nevertheless, the pattern of findings was largely similar across teacher and observer adjustment reports. Furthermore, the samples did not differ on observer-reported conduct problems, lending validity to the notion that any differences in outcomes were due to reporter differences. Despite the limitation of missing data, the use of maximum likelihood estimation allowed full utilization of available information.

Third, observational indices of adjustment may have been conflated with examiners' observations of children's emotion knowledge and self-concept. However, given the range of behaviors observed during the three hour assessment, and the modest correlations between observer reports and other sources of information, observer reports likely reflect a broad picture of adjustment, which is consistent with their wide use in similar contexts. Further, the study is strengthened by the independence of observational ratings and caregiver reports of punishment, as well as the independence of teacher reports of adjustment and all other study variables.

Lastly, the obtained relations reflect concurrent effects, and thus replication of these findings within longitudinal research designs is critical. Harsh punishment may evidence even greater negative effects for children with low emotion knowledge over time, as they become increasingly ill-equipped to make meaning of subsequent experience. Attention to the potential for distinct short and long-term effects of punishment has clear clinical implications depending on the timing of the treatment. Further, the modest positive

effects of harsh punishment obtained here may not persist over time, given that short-term gains in behavioral adjustment as a function of harsh punishment do not translate to long-term benefits (Gershoff, 2002).

In conclusion, we emphasize that these findings are not intended to endorse one form of punishment over another, nor do we advocate for the use of harsh punishment with one group of children. Though these findings suggest that harsh punishment may be associated with neutral or perhaps positive outcomes for some children, in certain domains, we fully expect that other disciplinary strategies, including those that are not harsh in nature, may have comparable or even stronger positive effects. The importance of this study rests in its illustration of the incremental knowledge to be gained from our attention to multiple domains of analysis, in this case, children's emotion knowledge, for understanding multifinal pathways in the wake of childhood experience.

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