THE JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY

ACAMH THE ASSOCIATION FOR CHILD AND ADOLESCENT MENTAL HEALTH

Journal of Child Psychology and Psychiatry **:* (2015), pp **–** doi:10.1111/jcpp.12477

Positive parenting and children's prosocial behavior in eight countries

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Background: Research supports the beneficial role of prosocial behaviors on children's adjustment and successful youth development. Empirical studies point to reciprocal relations between negative parenting and children's maladjustment, but reciprocal relations between positive parenting and children's prosocial behavior are understudied. In this study reciprocal relations between two different dimensions of positive parenting (quality of the mother–child relationship and the use of balanced positive discipline) and children's prosocial behavior were examined in Colombia, Italy, Jordan, Kenya, the Philippines, Sweden, Thailand, and the United States. **Methods:** Mother–child dyads ($N = 1105$) provided data over 2 years in two waves (M_{age} of child in wave 1 = 9.31 years, $SD = 0.73$; 50% female). **Results:** A model of reciprocal relations between parenting dimensions, but not among parenting and children's prosocial behavior, emerged. In particular, children with higher levels of prosocial behavior at age 9 elicited higher levels of mother–child relationship quality in the following year. **Conclusions:** Findings yielded similar relations across countries, evidencing that being prosocial in late childhood contributes to some degree to the enhancement of a nurturing and involved mother–child relationship in countries that vary widely on sociodemographic profiles and psychological characteristics. Policy and intervention implications of this study are discussed. **Keywords:** Prosocial behavior; parenting; cross-national; late childhood.

Introduction

The importance of reciprocal relations between parents' and children's behavior has been advocated by several theoretical models (Bell, 1968; Sameroff, 1975). However, few studies have tested such reciprocal effects for children's prosocial behaviors and positive parenting. Prosocial behaviors (i.e., voluntary, desirable actions aimed to help others) are beneficial for children's adjustment (see Eisenberg, Spinrad, & Knafo-Noam, 2015) and successful youth development (Lerner, Brentano, Dowling, & Anderson, 2002). Children's tendency to help, share, and spontaneously offer emotional support predicts a successful school career and counters aggression and depression (e.g., Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000).

In this study, we aimed to understand the reciprocal nature of interaction between positive parenting and children's prosocial behaviors in eight countries, using a two-wave longitudinal design. In particular, we examined how socialization processes and child characteristics may prompt, cultivate, or discourage the emergence and consolidation of prosocial behaviors during late childhood. Two distinctive dimensions of positive parenting were selected: the quality of mother–child relationships and balanced positive discipline. We reasoned that during late childhood these two parenting dimensions are important in fostering children's prosocial behaviors. Parents' warmth and involvement, characteristic of high-quality parent–child relationships, are associated with children's prosocial behavior (Laible, Carlo, & Raffaelli, 2000; Zhou et al., 2002). Likewise, positive discipline based on reasoning, explanations, and mild behavioral contingencies such as privilege removal convey an important

Conflict of interest statement: See Acknowledgements for disclosures.

Published by John Wiley & Sons Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main St, Malden, MA 02148, USA

function for the development of regulatory skills associated with the enactment of prosocial behaviors (Eisenberg et al., 2015; Luengo Kanacri, Pastorelli, Eisenberg, Zuffianò, & Caprara, 2013). Moreover, as children develop, they improve in abstract thinking, perspective taking, empathy, and moral reasoning (see Eisenberg et al., 2015), all of which make children not only more cognizant and receptive of parental and others' behaviors, but also receptive to perceiving more opportunities for acting prosocially.

We examined reciprocal relations between positive parenting and children's prosocial behavior in diverse countries. Considering different countries in the same sample permits the direct comparison of the magnitude and significance of theoretical paths. If the hypothesized associations are invariant across countries, the universality of the relations between positive parenting dimensions and children's prosocial behavior are supported. With the exception of some studies that have considered western cultural groups (Suizzo, 2007), to our knowledge very few studies have considered, simultaneously, the extent to which relations between family socialization processes and prosocial behavior are similar or different across countries.

From positive parenting to children's prosocial behaviors

Socialization theories offer ample arguments regarding links between positive parenting and children's prosocial behavior (Hastings, Miller, & Troxel, 2015). However, they all share the basic assumption that children's capacities to behave positively in the social world emerge from positive experiences in close relationships within the family (Hartup, 1989).

Positive parental qualities are expressed through parents' tendency to show affection and support toward their children (parental warmth) and to express interest and solicitude to their children's needs (parental involvement). Parental warmth and involvement may be related to the development of children's prosocial behavior in multiple ways. Warm and involved parents offer children feelings of security, trust, and protection that enhance children's feelings of belonging and connectedness to others, while lowering their self-oriented concerns (Hoffman, 2000). A nurturing parent offers a model of emotional concern (i.e., sympathy), caring, and comforting behaviors that is more likely to be emulated by children (Grusec & Hastings, 2015). Moreover, warm and supportive parents are likely more inclined to express positive emotions when interacting with their children, to encourage the expression of emotions – positive and negative – in their children and ultimately to provide opportunities to learn effective ways to enhance self-regulation (Eisenberg, Smith, & Spinrad, 2011). Thus, they may be likely to scaffold children's emotional regulation and sensitivity by directing their attention to the understanding of their own and others' emotions and needs (Malti, Eisenberg, Kim, & Buchmann, 2013). In addition, the warmth of the mother–child relationship may enhance children's perception of and attendance to parental messages that promote the internalization of parental values associated with the respect and care of others (Grusec & Goodnow, 1994).

As reviewed by Eisenberg et al. (2015), parental warmth, responsiveness, support, and involvement have been positively related to children's prosocial behavior in some studies. For example, maternal warmth has been associated with child self- and peer-report of prosocial behaviors in Australian and Turkish Australian children of earlier ages (Yagmurlu & Sanson, 2009). High maternal involvement also has been found to predict, in eleven-year-old children, the enactment of prosocial behaviors (e.g., Day & Padilla-Walker, 2009).

Regarding other positive parental practices related to prosocial behavior, many scholars have already stressed the importance of reasoning and explanation in disciplinary contexts. Parental actions require continuous effort in regulating children's interactions with others (Bornstein et al., 2008), using explanations about standards of conduct, offering reasons for them, providing social sanctions for those behaviors that may harm others, and approving or promoting positive ones. Initially, children learn to regulate their behaviors on the basis of anticipated social consequences (e.g., external regulation), but social sanctions alone do not guarantee internal regulation. Social sanctions combined with reasoning and explanations foster self-control and internalization of moral standards and values (Bandura, 1991). These types of positive discipline are more effective than physical punishment in providing the basis for children's self-regulatory capacities and internalization of values (e.g., Grusec & Goodnow, 1994; Hoffman, 2000). Overall, parental use of inductive discipline (e.g., reasoning, offering explanations about rules of conduct) and mild power assertive discipline (e.g., privilege removal) direct children's attention to deleterious consequences of harmful conduct, further enhance perspective taking, and solicit their empathic concern for the victim (Eisenberg et al., 2015; Hoffman, 2000).

In addition, positive discipline strategies may enhance children's acceptance of parental goals and expectations not only because they clearly convey behavioral contingencies for inappropriate behavior but also because they enhance children's responsibility in respecting and caring for others (Hastings et al., 2015). Consistent with this view, there is evidence that parental use of inductive reasoning in childhood is associated with children's prosocial behavior or sympathy and perspective taking (Carlo, Knight, McGinley, & Hayes, 2011; Farrant, Devine, Maybery, & Fletcher, 2012).

Overall, childhood studies have mainly focused on the effect of parenting dimensions, such as warmth and secure attachment, on children' prosocial responding (e.g., Laible et al., 2000; Putnick et al., 2015; Zhou et al., 2002). Studies of adolescents have stressed the role of dimensions, such as parental monitoring and quality of parent–child relationships. These parenting dimensions have shown moderate stability over the course of adolescence (Loeber et al., 2000; McNally, Eisenberg, & Harris, 1991).

From children's prosocial behavior to positive parenting

The claim that children are active agents of their own context and development is not new (Kuczynski, 2003). Only recently, however, have tests of children's contributions to their socialization received empirical attention in the developmental literature, especially for children's deleterious outcomes (Hoeve et al., 2009). In considering how child characteristics might affect parents' socialization during childhood, we cannot overlook how developmental timing influences the associations between children's prosocial behaviors and parenting. Indeed, there is some support for an increase with age in prosocial responding across childhood and adolescence (see Eisenberg & Fabes, 1998). Later studies on relative and absolute stability in prosocial responding (e.g., Knafo-Noam, Uzefovsky, Israel, Davidov, & Zahn-Waxler, 2015), as well as on heterogeneity in developmental patterns (e.g., Nantel-Vivier et al., 2009), have documented more stability of prosocial behaviors during childhood than earlier and later in development. Consistent with this view, we hypothesized that children's behavioral consistency over time may actively impact their parents' responsiveness in terms of eliciting high maternal warmth, engagement, and more positive inductive disciplinary practices.

Reciprocal relations between positive parenting and children's prosocial behavior

The seminal work of Bell (1968) and other scholars who have posited reciprocal processes in development, emphasizes the bidirectional nature of parent–child relationships (e.g., Belsky, 1984; Sameroff, 1975). Empirical studies point to reciprocal relations between negative parenting and children's maladjustment (e.g., Lansford et al., 2011), but reciprocal relations between positive parenting and children's prosocial behavior are understudied.

To our knowledge, only two studies have examined the autoregressive patterns and cross-lagged associations between positive parenting and prosocial behavior during middle childhood and early adolescence, respectively. Newton, Laible, Carlo, Steele, and McGinley (2014) examined cross-lagged relations between parental sensitivity (observational measure of mother and father respect of child autonomy and support during interactions with the child in a structured task) at age 4.5, third grade, and fifth grade and mother–teacher report of prosocial behavior at third, fifth, and sixth grade. Results supported bidirectional relations: mothers' positive parenting (but not fathers') when children were age 4.5 predicted their prosocial behavior at third grade, and third grade children's prosocial behavior predicted maternal sensitivity at fifth grade. Of interest to our study, maternal sensitivity at third and fifth grade did not predict prosocial behavior at fifth and sixth grade, respectively. In a two-wave study of associations between child-reported authoritative mothering and fathering and child-, mother-, and father-reported prosocial behavior toward family during early adolescence, Padilla-Walker, Carlo, Christensen, and Yorgason (2012) found a unique contribution of adolescent prosocial behavior to subsequent authoritative mothering (but not authoritative fathering) beyond the high stability of prosocial behavior within the family context.

Despite a limited number of empirical investigations, there are theoretical reasons to expect that positive parenting may account for the development of children's prosocial behavior. Furthermore, prosocial tendencies, in becoming more stable during childhood, may trigger parents to respond more positively to their children. Examining these reciprocal relations in different countries enables tests of the generalizability of these directional paths.

Prosocial behavior in different countries

A growing body of research examines how culture affects individual development. In our study, we tested in eight nations if the hypothesized reciprocal associations between positive parenting and children's prosocial behavior are invariant or different across countries. Accounting for potential cross-national differences in prosocial behavior is not an easy task. Data from Gallup World Poll reporting comparisons among 140 countries on social indicators related to prosocial behavior, such as volunteering, donating, and offering help to a stranger, show that wealthy, mostly Anglophone, countries, such as the United States, Great Britain, New Zealand, and Australia, are more prosocial than other countries (Organization for Economic Co-operation and Development [OECD], 2011). Being prosocial requires possessing economic and personal resources that can be allocated in favor of others. However, it also is important to recognize the role of cultural values in investigating national differences in prosocial responding. In a study comparing 23 different countries, the relation between cultural embeddedness (values related to tradition, security, obedience, and social order) and offering help to a stranger in an experimental context provided evidence that embeddedness related strongly and negatively to helping in both develop-

ing and wealthy countries (Knafo, Schwartz, & Levine, 2009). Overall, from the limited cross-national studies examining potential differences in prosocial behavior, results have been mixed. Variability across countries may depend on the kind of prosocial behavior involved (e.g., sharing, helping, or cooperative behaviors), the target of the prosocial action (e.g., in-group or out-group, peers, family members), as well as specific characteristics of a given situation (e.g., costs, level of spontaneously; Eisenberg et al., 2015).

In this study, we focus on reciprocal relations between positive parenting and children's prosocial behavior in multiple countries. Finding that reciprocal paths between positive parenting and children's prosocial behavior are invariant across countries would support the broad generality of parent–child reciprocity in these links. If findings differ across countries, the universality of the theoretical model cannot be supported and leaves room for new questions.

This study

Our primary goal was to advance understanding of positive parenting and children's prosocial behavior in a set of diverse countries around the world. We used data from the Parenting Across Cultures (PAC) project, an international collaboration among China, Colombia, Italy, Jordan, Kenya, the Philippines, Sweden, Thailand, and the United States. These countries were selected for inclusion in PAC on the basis of the unique contribution that each group could make to understanding of parenting, child development, and how parenting affects children's adjustment. Several criteria were used to select the participating countries and cultural groups within these countries. An overarching goal was to recruit cultural groups that varied along several dimensions that have been found to affect parent–child relationships (e.g., normativeness of harsh discipline strategies; individualist versus collectivist orientation; the culture's predominant religious affiliation; notable laws involving parenting). This sample of countries was diverse on several sociodemographic dimensions, including predominant ethnicity, predominant religion, economic indicators, and indices of child well-being. For example, on the Human Development Index, a composite indicator of a country's status with respect to health, education, and income, participating countries ranged from a rank of 4 to 128 of 169 countries with available data. To provide a sense of what this range entails, the infant mortality rate in Kenya, for example, is 40 times higher than the infant mortality rate in Sweden. In the Philippines, 23% of the population falls below the international poverty line of <US$1.25 per day, whereas none of the population falls below this poverty line in Italy, Sweden, or the United States. The participating countries varied not only on sociodemographic indicators, but also on psychological constructs such as individualism versus collectivism. Using Hofstede's (2001) rankings, the participating countries ranged from the United States, with the highest individualism score in the world to Colombia and Thailand, countries that are among the least individualistic in the world. More germane to parenting, this range of countries has been shown to display divergent parenting characteristics, such as parenting attributions and attitudes (Bornstein, Putnick, & Lansford, 2011). The purpose of recruiting families from these countries was to create an international sample that would be diverse with respect to a number of sociodemographic and psychological characteristics. Ultimately, this diversity provided us with an opportunity to examine our research questions in a sample that is more generalizable than is typical in most research to date.

This study examined two research questions. First, are positive parenting and children's prosocial behaviors reciprocally related over time? We hypothesized that positive parenting would predict children's subsequent prosocial behavior and that children's prosocial behavior would predict subsequent positive parenting. Second, do these associations hold across countries? Although we did not specifically hypothesize group differences, we sought to investigate the possibility given that previous research has suggested mean differences across countries in prosocial behavior but has not examined how relations among these constructs may differ across countries. We addressed these research questions during late childhood, within a 2-year longitudinal design, when children were 9 and 10 years old. This age group was targeted because children in this range are cognitively advanced enough to report on their own and others' behavior (e.g., with improvement in metacognition or *thinking about thinking*; Metcalfe & Finn, 2013) but young enough that parents' discipline strategies are still likely to play an important role in their lives (e.g., to satisfy children's physical needs, to encourage learning, to provide a safe, stable home; Nickerson & Nagle, 2005).

Methods

Participants

Altogether, convenience samples of 1105 mother–child dyads from eight countries provided data over 2 years in two waves. Children (50% female) averaged 9.31 years (SD = 0.73) in wave 1 and 10.35 years (SD = 0.72) in wave 2. Mother–child dyads were drawn from Medellín, Colombia (n = 101 dyads), Naples and Rome, Italy (n = 200 dyads), Zarqa, Jordan (n = 113 dyads), Kisumu, Kenya (n = 95 dyads), Manila, Philippines (n = 107 dyads), Trollhättan/Vänersborg, Sweden (n = 97 dyads), Chiang Mai, Thailand (n = 116 dyads), and Durham, North Carolina, United States (n = 276 dyads). Children aged 8–10 years and their parents were recruited in 2008 from schools that serve socioeconomically diverse populations in each participating site. Mothers averaged 38.3 years of age (SD = 6.68) and had completed 12.59 years of education

(*SD* = 4.29) on average. Mothers reported that 76.9% were married, 3.6% divorced, 4.1% separated, .9% widowed, 8.7% cohabiting, and 5.8% never married (further sociodemographic information [e.g., income ranges] for each country are reported in the supplemental material). Family triads completed follow-up interviews 12 months (in 2009) and 24 months (in 2010) following their initial interview, so children ranged in age from 10 to 12 years at the end of the study. This study focuses on data collected in 2009 (hereafter wave 1 in this study) and in 2010 (hereafter wave 2 in this study). The participants who provided data in wave 2 did not differ from the original sample with respect to child gender or parents' marital status or education; 97% of participants provided follow-up data. Recruitment at each site was designed to sample families representative of the city of recruitment (e.g., with respect to socioeconomic status, public or private school enrollment), but the samples included in this study are not nationally representative. Although data for the larger PAC project were collected in China, mothers' reports of children's prosocial behaviors were not collected in that country, so China is excluded from the present analyses. In the United States, the sample was 35% European American, 33% African American, and 32% Hispanic. In Kenya, the sample was from the Luo ethnic group, which is the third largest ethnic group in Kenya (13% of the population), after the Kikuyu (22%) and Luhya (14%). Although there are ethnic minorities and immigrant families to varying degrees, the samples in the other participating countries identified with the majority group of the country. Child age and gender did not differ significantly across countries.

Procedure

Letters describing the study were sent home with children, and parents were asked to return a signed form if they were willing to be contacted about the study (in some countries) and telephoned to follow-up on the letter (in other countries). Rates of agreement to participate, as indicated by returning the signed form or agreeing over the telephone varied depending on the extent of schools' involvement in the recruiting process. Specifically, recruitment rates were: 58% in Colombia, 51% in Italy, 88% in Jordan, 80% in Kenya, 24% in both Philippines and the United States, 59% in Sweden, and 60% in Thailand. Families were then enrolled in the study until the target sample size was reached in each country. To make each country's sample as representative as possible of the city from which it was drawn, families of students from private and public schools were sampled in the approximate proportion to which they were represented in the population of the city. Furthermore, children were sampled from schools serving high-, middle-, and low-income families in the approximate proportion to which these income groups were represented in the local population. These sampling procedures resulted in an economically diverse sample that ranged from low income to high income within each site.

A procedure of forward- and back-translation was used to ensure the linguistic and conceptual equivalence of measures across languages (Maxwell, 1996). Substantial efforts were implemented to ensure that the measures would be valid in all sites by focusing on linguistic equivalence as well as the cultural meanings that would be imparted by the measures (Erkut, 2010). Measures were administered in the following languages: Spanish (Colombia and the United States), Italian (Italy), Arabic (Jordan), Dholuo (Kenya), Filipino (the Philippines), Swedish (Sweden), Thai (Thailand), and English (the United States and the Philippines).

Institutional review boards in each country approved the study protocol. After obtaining parental informed consent and child assent, interviews were completed in the participants' home or location of their choosing (e.g., school). Interviewers read each question to children and recorded their answers. Rating scales were provided in the form of visual aids to help children remember response options as they answered questions. Mothers completed interviews either orally or as written questionnaires. Interviews lasted approximately 1 hr. Depending on the site, parents were given modest financial compensation for their participation or children were given a small age-appropriate gift to thank them for their participation.

Measures

Quality of mother–child relationship (child-reports). The Parental Acceptance-Rejection/Control Questionnaire-Short Form (Rohner, 2005) was used to measure children's perceptions of their mothers' attitudes and feelings toward them. Children rated 29 items (1 = never or almost never, 4 = every day). On the basis of feedback from pretesting, we modified the original response scale (from almost never true to almost always true) by quantifying it to reduce the possibility of ambiguous interpretations across countries. In this study, we derived one scale, measuring parental warmth/lack of neglect-indifference. We reasoned that both warmth and lack of neglect may capture distinctive characteristics of the relationship between parents and their children. In particular, not paying attention to the child when needed may also reflect an aspect of maternal lack of responsiveness. Thus, the scale was computed as the average of eight items from the warmth–affection subscale (e.g., 'My mother makes me feel wanted and needed') and six items of the reversed score of the neglect-indifference subscale (e.g., 'My mother does not pay attention to me when I ask for help'). The correlation between maternal warmth and maternal lack of neglect-indifference was .50 in wave 1 and .48 in wave 2. Thus, items were averaged to compute the composite scale. In a meta-analysis of the reliability of this measure using data from 51 studies in eight countries, Khaleque and Rohner (2002) concluded that α coefficients exceeded .70 in all groups, effect sizes were homogenous across groups, and convergent and discriminant validity were demonstrated (Rohner, 2005). In this study, αs across all countries were .81 in wave 1 and .82 in wave 2 (αs for each country for all the measures of this study are included in the supplemental material).

Balanced positive parental discipline (child-reports). To obtain this score, we capitalized on several items that are part of the Discipline Interview (Lansford et al., 2005). This measure includes items regarding the frequency (1 = never, 2 = less than once a month, 3 = about once a month, 4 = about once a week, 5 = almost every day) with which mothers use 17 particular discipline practices. Children were asked about their mothers' use of different types of discipline when they (children) misbehave. The external validity of this interview across countries has been demonstrated in previous analyses using data from the PAC study (e.g., Huang et al., 2012; Lansford et al., 2010). For the purposes of this study, analyses focused on two groups of parental practices: positive discipline (six items concerning inductive discipline and manipulating privileges; e.g., 'My mother teaches me about good and bad behavior. Like it's not nice to hit, or it's polite to say thank you'; and negative/punitive discipline (six items concerning harsh verbal and physical discipline; e.g., 'My mother raises her voice, yells, or scolds me'). Then, to capture the use of positive discipline above and beyond the use of negative discipline, we operationalized balanced positive parental discipline as a ratio of positive discipline to the sum of negative discipline plus positive discipline. We reasoned that, when confronted with inappropriate child behaviors, positive and negative parental disciplinary actions may covary, and positive discipline may occur within the context of varying degrees of negative discipline (Grusec & Goodnow, 1994). Higher scores thus indicate a relatively greater proportional use of positive discipline strate-

gies. In this study, αs across all countries for positive discipline were .61 in wave 1 and .60 in wave 2; and for negative discipline, .72 in wave 1 and .75 in wave 2.

Children's prosocial behavior (mother and child-report). Children reported their prosociality using five items (e.g., 'I try to help others'; 1 = never, 3 = often). A modified version of the scale was used with mothers. In this version, three items with the best psychometric properties from the Children's Prosocial Behavior scale were selected. Each item was reformulated using the third person (e.g., 'He/she tries to help others'; 1 = never, 5 = often). The validity and reliability of this scale has been demonstrated in both Italian and other European samples (e.g., Caprara & Pastorelli, 1993; Caprara, Steca, Zelli, & Capanna, 2005). In this study, αs for child-report = .71 and .70 in waves 1 and 2, respectively; αs for mother-report = .63 and .65 in waves 1 and 2, respectively.

Maternal level of education. As income and education are highly correlated (Hauser & Warren, 1997), maternal education was used as the indicator of socioeconomic status. Mothers reported the number of years of education they completed.

Missing data analysis. Full-information maximum likelihood (FIML) estimation in M*plus* v7.11 (Muthén & Muthén, 2012) was used to handle missing data in our analyses. This method offers unbiased estimates under ignorable missing data patterns like missing completely at random (MCAR) or missing at random (MAR). The pattern of missingness was tested by using the missing values option in SPSS v. 18 (SPSS Inc., Chicago, IL). Little's (1988) test for MCAR was not statistically significant indicating that the variables in our analysis meet the assumption of MCAR.

Analysis plan. All models were evaluated as structural equation analyses in M*plus* v7.11 (Muthén & Muthén, 2012). Mother's level of education and child's gender served as covariates in the *SEM*s, predicting all other variables. All variables used were manifest scale scores as described above with the exception of child prosocial behaviors. This construct was modeled as a latent factor indicated by mother- and child-report of prosocial behaviors. The loadings of the two indicators were both constrained to unity for identification purposes. In models with 2 years of prosocial behavior reports, item-specific residual variances were allowed to covary across time within reporter.

We assessed model fit by a combination of the chi-squared test of model fit and widely used indices of approximate fit, including the root mean squared error of approximation (RMSEA), the comparative fit index (CFI), the Tucker–Lewis Index (TLI), and the standardized root mean square residual (SRMSR). Acceptable and poor fit measures are noted with each estimated model. As all of our models were structurally saturated, the measurement model for prosocial behaviors was the only source of ill fit.

All models used group-mean-centered values of all variables. This is equivalent to fixed-effects modeling to adjust for main effects of countries on scaling or use of the instruments. Cross-national differences were evaluated by testing cross-group equality constraints in a multiple-group structural equation model (*SEM*).

Results

Descriptive statistics and correlations

Table 1 displays descriptive statistics of the study variables across countries (descriptive statistics divided by country are included in the supplemental material). The average level of quality of mother–child relationships was high across countries. Mean levels of balanced positive maternal discipline reflected near identity between the numerator and the denominator in the examined ratio, which is interpretable as near identity between the amount of positive and negative discipline used by mothers to cope with their children's misbehaviors. Children were rated as highly prosocial according to both mother and child-reports.

Table 1 Descriptive statistics of study variables

	Informant	*M*	*SD*
Age 9			
Quality of mother–child relationship[a]	Child	3.56	0.42
Balanced positive parental discipline[b]	Child	0.67	0.08
Child prosocial behavior	Mother	3.73	0.75
Child prosocial behavior	Child	2.48	0.40
Age 10			
Quality of mother–child relationship[a]	Child	3.58	0.40
Balanced positive parental discipline[b]	Child	0.69	0.08
Child prosocial behavior	Mother	3.74	0.76
Child prosocial behavior	Child	2.51	0.40

[a]Computed as the average of eight items from the warmth–affection subscale and six items of the reversed score of the neglect-indifference subscale. Higher scores indicate a relatively better quality of mother–child relationship.
[b]We operationalized balanced positive parental discipline as a ratio of positive discipline to the sum of negative discipline plus positive discipline. Higher scores indicate a relatively greater proportional use of positive discipline strategies.

Table 2 displays the correlation matrix of all variables across countries (correlation matrices divided by country are included in the supplemental material). Within waves, there were medium to strong correlations among examined indicators except for mothers' reports of children's prosocial behavior and children's reports of both quality of the mother–child relationship and balanced positive parental discipline at both waves.

Tests of reciprocal relations

The model of reciprocal relations was a two-wave autoregressive cross-lagged model as depicted in Figure 1. This model fit the data well by all criteria, χ^2 (13, N = 1,114) = 21.36, p = .066, est. RMSEA (90% CI) = .024 (.000, .042), CFI = 0.99, TLI = 0.98, SRMR = .019. Before interpreting the parameter estimates, we ran a multiple-group version of this model with all autoregressive and cross-lag parameters fixed to equality to check for differences by country. This model resulted in rejection of the hypothesis of perfect fit, χ^2 (253, N = 1,114) = 333.10, p < .001, but acceptable, if not ideal, measures of approximate fit, est. RMSEA

Table 2 Correlations among study variables

	1	2	3	4	5	6	7	8
Age 9								
1. Quality of mother–child relationship (C)	1							
2. Balanced positive parental discipline (C)	.45**	1						
3. Child prosocial behavior (M)	.17**	.15**	1					
4. Child prosocial behavior (C)	.36**	.32**	.24**	1				
Age 10								
5. Quality of mother–child relationship (C)	.49**	.43**	.20**	.31**	1			
6. Balanced positive parental discipline (C)	.34**	.50**	.15**	.27**	.49**	1		
7. Child prosocial behavior (M)	.15**	.12**	.51**	.18**	.19**	.12*	1	
8. Child prosocial behavior (C)	.31**	.29**	.25**	.48**	.38**	.29**	.32**	1

(M) Mother-report. (C) Child-report.
*$p < .05$; **$p < .01$.

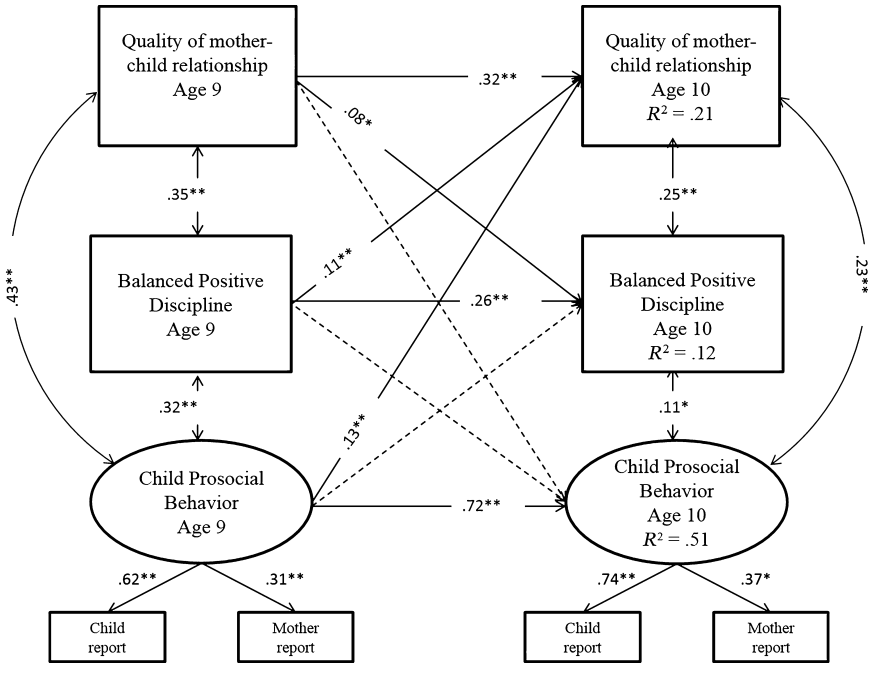

Figure 1 Reciprocal relations model across eight countries. *Note*. All the reported parameters are standardized. *$p < .05$; **$p < .01$. For ease of interpretation, the effects of covariates (i.e., child gender and maternal education) are not depicted on the Figure

(90% CI) = .056 (.038, .072), CFI = 0.95, TLI = 0.90, SRMR = 0.068. The likelihood ratio test indicated that the constrained model significantly decreased fit, χ^2 (240) = 311.74, $p = .001$. However, given the acceptable fit of the constrained model and the extremely large number of pairwise difference tests called for to probe the reduction in fit, we opted to proceed with the full-sample model that we originally estimated.[1]

As shown in Figure 1, the predictive paths to age 10 quality of mother–child relationship from age 9 quality of mother–child relationship, balanced positive discipline, and child prosocial behavior were all uniquely significant and positive, adjusting the covariates, as were the paths predicting age 10 balanced positive discipline from age 9 balanced positive discipline and mother–child relationship quality. Only the autoregressive path from age 9 child prosocial behavior was a significant unique predictor of age 10 child prosocial behavior. A full table of coefficient estimates is included in the supplemental material.

Discussion

This study extends research on reciprocal relations between positive parenting and children's prosocial behaviors across different countries. Most previous empirical research has focused on the negative side of both parent and child behaviors, but this study advances understanding of reciprocal relations among quality of mother–child relationships, balanced positive parental discipline, and children's prosocial behavior, taking into account stability and concurrent associations for both parenting dimensions and children's prosocial behavior in eight countries. Overall, across all eight countries in the study, findings revealed reciprocal relations between

the two parenting dimensions. That is, the quality of mother–child relationship predicted subsequent balanced positive parental discipline and vice versa. Furthermore, children with higher levels of prosocial behavior at age 9 elicited in the next year significantly more maternal warmth and involvement indicative of mother–child relationship quality. However, age 9 prosocial behavior was unrelated to subsequent balanced positive parental discipline. During late childhood, higher levels of children's perceived mother–child relationship quality and balanced positive parental discipline did not predict children's subsequent prosocial behavior.

Our findings provided evidence for a universal influence of child prosocial behavior on the affective climate within the family, above and beyond the stability of variables across time and their associations within time. Previous studies focusing on cultural differences in prosocial responding have been based on single-culture studies showing that cooperative behaviors are normative in some contexts (Graves & Graves, 1983; Williams, 1991), whereas in others, hostility is the norm and helping or sharing behaviors are unusual (Rohner, 1975). Socialization agents, such as parents, may have a key role in transmitting the values of a culture with respect to prosocial behaviors. The study of how cultural contexts may moderate the effect of parental socialization styles and practices on prosocial behaviors deserves further attention.

Taken together, the findings support a child effects perspective on the role of children's prosocial behaviors in relation to positive parenting in late childhood rather than a parent-driven model of socialization. As reported in some studies (Eisenberg et al., 2015; Luengo Kanacri et al., 2013), prosocial children possess better emotional and behavioral regulatory capacities that are conducive to a course of action that benefits others. These capacities may evoke more trusting and supportive maternal responses and over time may actively transform mothers' behaviors. Ultimately, prosocial children actively construct their own environment, initiating exchanges and interactions conducive to positive mother–child relationships characterized by mutual warmth and interest (Bell & Harper, 1977). The lack of relation between children's prosocial behavior and balanced positive discipline suggests that the use of educational (positive) strategies in disciplinary encounters is less needed with prosocial children.

In addition, the developmental timing of our study deserves further consideration. As observed in the study of bidirectional relations between parenting (e.g., monitoring) and conduct disorder/antisocial behavior (Pettit & Arsiwalla, 2008), the strength of such associations might depend on the age of the children and on particular transitional periods. Our study covers late childhood, which is at the threshold of adolescence. Our results are somewhat concordant with Newton et al. (2014) study using observed parental sensitivity measures and mother and teacher reports of prosocial behaviors. They found that in earlier childhood (age 4.5) maternal sensitivity predicted children's prosocial behavior at third grade, but not prosocial behavior from third to fifth grade or from fifth to sixth grade. Furthermore, during early adolescence, maternal authoritative parenting did not predict children's self-reports of prosocial behavior (Padilla-Walker et al., 2012). Thus, from middle childhood to adolescence, prosocial tendencies reflect a high degree of stability, whereas more variations are observable early in childhood. Developmentally, prosocial behavior typically increases during early childhood and then decreases during the transition to young adulthood, when self-focused interests become more salient (Luengo Kanacri et al., 2013**).** In addition, over the course of late childhood, shared environmental influences (i.e., family) appear to have a smaller impact on children prosociality than genetic and nonshared environmental influences (Knafo-Noam et al., 2015).

Strengths, limitations, and future directions

The main strength of this study resides in having tested for the first time reciprocal associations between positive parenting and children's prosocial behavior in a set of diverse countries around the world. However, we must acknowledge some important limitations of our study. Due to the constraints related to our data collection at this time period, we could not cover a longer developmental period and examine indirect effects in a longitudinal analysis. In addition to the covariates that were taken into account (child gender and maternal educational level), other variables related to family structure could have had a role in explaining prosocial development and should be considered in future studies (e.g., number of siblings, extended vs. nuclear family). In particular, taking into account the socioeconomic diversity around the world, and in particular between the countries examined in this study, and how such diversity might affect children's health, a potential confound of the main hypothesized relations might be children's health problems. In a previous study, researchers focused their attention on the effects of children's health on family resources and provided information about associations between health and social capital in a socioeconomically disadvantaged population (Schultz, Corman, Noonan, & Reichman, 2009). This study might suggest that, while looking at the bidirectional association between the quality of mother–child relationships, maternal use of positive discipline, and children's prosocial behavior, it might be important to control for possible influences of children's health problems in impairing the quality of mother–child relationship, as well as children's capacity and willingness to behave prosocially toward others.

However, future studies are needed to investigate this issue. Furthermore, parents and children may hold different perceptions of parental behaviors, making the use of children's perceptions only for positive parenting a limitation of the study. Moreover, the low alphas for mother-reported prosocial behavior suggest that further work is needed to provide more items to assess this construct cross-culturally. Also, the samples drawn from each country were not nationally representative; therefore, the findings should not be overgeneralized or interpreted as reflecting country-wide effects**.** In fact, even if our focus was on universal explicative mechanisms regarding relations between positive parenting dimensions and children's prosocial behaviors, we recognize as limitations of this study its correlational nature and short-term longitudinal design, constraining the possibility of drawing causal conclusions. Finally, we acknowledge the limitation of assessing only overt prosocial behaviors. Individuals may behave prosocially in more covert ways (e.g., providing anonymous help) that were not assessed in this study.

Policy and interventions that attempt to improve positive parenting and child prosocial behavior should take into account the universal impact that child prosocial behavior has on positive parenting during late childhood. Indeed, in accordance with previous reviews (e.g., Wyatt Kaminski, Valle, Filene, & Boyle, 2008), interventions aimed at promoting prosocial skills would likely include both parent and child components to be more effective than intervention targeting either parent or child alone.

Conclusions

In this study, we sought to advance understanding of the dynamics of the association between positive parenting and children's prosocial behavior across eight countries. Reciprocal relations between the quality of the mother–child relationship, balanced positive discipline, and children's prosocial behavior were tested. Findings yielded similar relations across countries, evidencing that being prosocial in late childhood contributes to some degree to the enhancement of a nurturing and involved mother–child relationship in countries that vary widely on sociodemographic profiles and psychological characteristics.

Supporting information

Additional Supporting Information may be found in the online version of this article:

Table S1. Sociodemographic statistics divided by country.

Table S2. Coefficients α for all variables in the study for two times by country.

Table S3. Descriptive statistics of study variables divided by country.

Table S4. Correlations among study variables divided by country.

Table S5. Reciprocal relations model across eight countries.

Acknowledgements

This research has been funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development grant RO1-HD054805 and Fogarty International Center grant RO3-TW008141. Author P.S.M. was supported by grant K01DA024116 from the National Institute on Drug Abuse. Author K.A.D is supported by Senior Scientist award 2K05 DA015226 from the National Institute on Drug Abuse. Author B.P.L.K. was partially funded by the Interdisciplinary Center for Social Conflict and Cohesion Studies, CESOC, GRANT: CONICYT/FONDAP/15130009. This research also was supported by the Intramural Research Program of the NIH/NICHD. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH or NICHD. The authors have declared that they have no competing or potential conflicts of interest.

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Key points

- As documented in previous research, prosocial behaviors are beneficial on children's adjustment and successful youth development. In this study, significant bidirectional longitudinal effects emerged between age 9 and age 10 quality of mother–child relationships and balanced positive discipline.
- Of importance, age 9 child prosocial behavior contributed to some degree to the enhancement of age 10 mother–child relationship quality in countries that vary widely on sociodemographic profiles and psychological characteristics.
- Policy and intervention efforts that attempt to improve positive parenting and child prosocial behavior should take into account the universal impact that child prosocial behavior has on positive parenting during late childhood.

Note

1. Note that power for comparing nested models depends heavily on both sample size and the number of additional constraints (degrees of freedom) in the more restricted model (Preacher & Coffman, 2006). Relative to the commonly accepted *close fit* of RMSEA of .05, our sample size of 1,114 and difference in degrees of freedom of 240 resulted in power in excess of .99 to detect the minimally poorer fit of est. RMSEA = .056 found in our restricted model.

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Accepted for publication: 15 September 2015