

ORIGINAL ARTICLE

Maternal caregiving, prosocial behavior, and self-esteem in middle childhood

Brianne R. Coulombe PhD¹  | Tuppett M. Yates PhD² 

¹ Department of Psychology, University of South Carolina, Aiken, United States

² Department of Psychology, University of California, Riverside, United States

Correspondence

Brianne R. Coulombe, Department of Psychology, University of South Carolina, Aiken, United States.

Email: brianne.coulombe@usca.edu

Abstract

This study assessed maternal caregiving quality and children's prosocial behavior as related to changes in child self-esteem from early childhood across the transition into formal schooling. Although a robust literature indicates that sensitive caregiving promotes self-esteem, less is known about the potential contribution of children's positive social behavior to enhanced self-esteem. This study drew on a diverse sample of young children ($N = 250$; $M_{age} = 4.085$, $SD = .249$; 50% female, 50% male; 46% Latinx) to evaluate prospective relations between an observational assessment of sensitive maternal caregiving at the age of 4 and child reports of self-esteem at the age of 8 as mediated by teacher-reports of children's prosocial behavior at the age of 6. Analyses revealed a significant indirect pathway whereby sensitive maternal caregiving promoted children's self-esteem via children's prosocial behavior. These findings highlight both sensitive caregiving and children's prosocial behavior as promising points of intervention to bolster children's self-esteem.

KEYWORDS

caregiving, mediation, prosocial behavior, self-esteem

1 | INTRODUCTION

A robust theoretical foundation suggests that self-esteem (i.e., global appraisal of oneself as positive or negative; Harter, 1988; Rosenberg et al., 1995) is rooted in the quality and sensitivity of early caregiving experiences (Bowlby, 1969; Cassidy et al., 2013; Cicchetti & Beeghly, 1990; Sroufe, 1990). Sensitive caregiving, which is characterized by warmth and support for the child, low hostility and rejection, and confidence in the child's abilities to navigate age-appropriate

challenges successfully and autonomously (i.e., low intrusiveness; Egeland, 1982; Egeland et al., 1993), informs children's emergent view of themselves as competent and worthy of love and support (Bowlby, 1969; Sroufe, 1989). As development progresses, children's sense of self both guides and is informed reciprocally by relational exchanges outside the family, such as with peers (Harter & Leahy, 2001; Marshall et al., 2014). Thus, in addition to well-documented direct relations between caregiving quality and children's self-esteem (e.g., Frank et al., 2010; Özdemir et al., 2017), caregiving quality may shape children's self-esteem indirectly by influencing children's social behaviors beyond the family (Georgiou et al., 2016; Sroufe et al., 1999).

Although several studies have examined how child self-esteem influences social behavior (Donnellan et al., 2005; Trzesniewski et al., 2006), directional relations from social behavior to child self-esteem remain largely understudied. Moreover, although studies have examined factors associated with self-esteem in later developmental periods, particularly adolescence (e.g., Frank et al., 2010; Laible et al., 2004; Trzesniewski et al., 2006), efforts to clarify relations between children's social behaviors beyond the family and the development of self-esteem *within childhood* are limited. Research that elucidates relational pathways toward positive self-evaluations within childhood are crucial for applied efforts to promote self-esteem in later development. The current study addressed these gaps by evaluating both the direct relation between maternal caregiving quality in early childhood (the age of four) and changes in children's self-esteem across the transition to formal schooling (the age of 4–8) and a theoretically-specified indirect pathway from caregiving to self-esteem via children's positive social behaviors (i.e., prosocial behaviors that are intended to benefit others; Batson & Powell, 2003) at the age of 6.

1.1 | The relational roots of self-esteem

Children's sense of self becomes more complex, abstract, and evaluative across time (Harter, 2015; Harter & Leahy, 2001). In early development, children's self-representations are primarily descriptive and anchored to behaviors (e.g., "I run fast; my mom reads to me") or preferences (e.g., "I like chocolate; I love my sister"), with evaluative components restricted to capability and incapability (Jennings, 2016). By middle childhood, self-representations begin to include abstract trait labels (e.g., smart, athletic, helpful) that reflect the combination of multiple behaviors into a single trait, as well as *others'* evaluations of the child (Magro et al., 2019). This shift toward evaluative self-representations represents a developmental transition from a descriptive self-concept to the evaluative constructs of self-esteem and self-worth (Beane & Lipka, 1980; Manning, 2007).

Attachment theorists emphasize that the foundation for child self-esteem rests in the quality of early caregiving exchanges (Bowlby, 1969; Bretherton, 1987; Sroufe, 1990). In this view, children's emergent beliefs about themselves, others, and the social world (i.e., internal working models) develop based on the availability and sensitivity of their primary caregivers (Bowlby, 1969; Bretherton, 1987). Through repeated experiences of eliciting positive care from responsive caregivers, children form an understanding of themselves as both worthy of love and capable of garnering support when needed. Thus, the organization and evaluation of the self emerges from the organization and quality of the parent-child relationship (Sroufe, 1989). Consistent with the tenets of attachment theory, empirical investigations have documented significant relations between caregiving quality (and the ensuing security of attachment) and children's developing sense of self. Research indicates that caregiving quality and attachment relationships inform both children's descriptive self-concepts (Doyle et al., 2000) and, ultimately, their evaluative self-esteem and self-worth (Booth-LaForce et al., 2006; Laible et al., 2004).

Sensitive caregiving encompasses multiple elements that promote a child's sense of security and safety in the parent-child relationship (Belsky & Fearon, 2008; De Wolff & Van Ijzendoorn, 1997). In addition to providing the child with support (i.e., positive regard, encouragement when tasks are challenging, assistance when the child demonstrates need), sensitive caregivers refrain from negative behaviors, such as intrusiveness (i.e., interference with the child's efforts to gain autonomy, concern for the caregiver's goals rather than the child's) and hostility (i.e., rejection, anger, derogation), which undermine children's sense of felt security (Booth-LaForce & Oxford, 2008).

Prior research informed our hypothesis that sensitive maternal caregiving in early childhood would be related positively to children's self-esteem across development. For example, studies have shown that observations of sensitive maternal caregiving characterized by high support, low intrusion, and low hostility longitudinally predict positive self-concept, especially as it pertains to social competence, in early (Paulus et al., 2018) and middle childhood (Verschuere et al., 2012). With regard to the more global evaluations characteristic of self-esteem, prior studies have focused largely on negative cycles by which insensitive caregiving eventuates in low self-esteem. For example, a wealth of evidence suggests that hostile or conflictual caregiving contributes to lower child self-esteem (e.g., Lim et al., 2012; Putnick et al., 2008; Wickham et al., 2015). However, some research points to positive relations between attachment security with both mothers and fathers, which is supported by sensitive caregiving, and concurrent reports of child self-esteem (Booth-LaForce et al., 2006). Although most prior research on caregiving quality and self-esteem has documented relations between caregiving in childhood and later assessments of self-esteem in adolescence and beyond (e.g., Frank et al., 2010; Laible et al., 2004; Raboteag-Saric & Sakic, 2014), both theory and research point to the promotive impact of sensitive caregiving on the development of self-concept and later self-esteem across childhood (Harter, 2015; Paulus et al., 2018).

1.2 | The relational roots of prosocial behavior

In addition to direct effects on self-esteem, early childhood caregiving quality may support indirect pathways toward self-esteem via children's social behaviors outside the family. As with self-esteem, prosocial behavior increases in complexity across development, as children's repertoire of available prosocial responses (e.g., sharing and caring and comforting) broadens while becoming more refined and specific to contextual demands (Malti & Dys, 2018). With increasing emotion knowledge and awareness, children are better able to distinguish when and how they should engage in prosocial expressions toward others. Finally, maturing emotion regulation skills support prosocial behavior as children must recognize and care about the needs of others without becoming over-aroused (Coulombe et al., 2019; Eisenberg, 2010).

Prosocial development is supported by children's interactions with caregivers. Sensitive caregiving scaffolds children's emotion understanding and models appropriate behavioral responses for managing emotions across time (Merz et al., 2015). In the context of sensitive and supportive co-regulation of emotion, children gain confidence that their own (and others') emotions can be known, understood, and managed (Sroufe, 1997). At the same time, children who receive positive care develop the self-regulatory capacities necessary to set aside their own needs in favor of assisting another (Denham et al., 2015; Williams & Berthelsen, 2017). Together, these developmental accomplishments instill children with the capability, motivation, and confidence that their actions can be instrumental in mitigating the distress of another person. For example, Eisenberg and colleagues (2019) found that emotion-focused caregiving, which involves talking through children's distress and helping them to find a solution, contributed to lower levels of children's distress when seeing another child in need and thereby facilitated children's prosocial behavioral responses 1 year later.

Perhaps unsurprisingly, a growing body of empirical evidence suggests that sensitive caregiving, as well as the secure attachments it engenders, are associated positively with children's sharing and helping behaviors. For example, observed attachment security in the preschool period is associated positively with concurrent observations of children's helping and sharing behaviors in the laboratory (Beier et al., 2019). Across time, high parental support and low parental hostility in early childhood promote prosocial behavior as reported by teachers later in middle childhood (Williams & Berthelsen, 2017). Thus, we hypothesized that sensitive maternal caregiving observed during the preschool period (the age of four) would be related positively to teacher reports of children's prosocial behaviors toward peers at the age of six. In turn, we predicted that children's prosocial behavior would contribute to increases in child self-esteem from the ages of four to eight.

1.3 | Prosocial behavior and self-esteem

Paralleling well-documented effects of self-esteem on children's social behaviors (e.g., Donnellan et al., 2005; Fu et al., 2017; Hesari & Hejazi, 2011; Trzesniewski et al., 2006), mounting theory and research point to reciprocal effects of children's social behaviors on self-esteem. For example, prior studies suggest that children who behave prosocially elicit positive responses from others, including teachers (Coulombe & Yates, 2018), peers (Layous et al., 2012), and caregivers (Newton et al., 2014). In turn, positive feedback from social partners enhances children's self-esteem (Furnham & Cheng, 2000; Raboteag-Saric & Sakic, 2014). Despite these suggestive findings, however, relations between prosocial behavior and self-esteem *within* childhood remain untested. In later development, studies have shown positive impacts of prosocial behavior on self-esteem. For example, among adults, volunteerism is positively associated with self-esteem, both concurrently (Kulik, 2018) and across time (Brown et al., 2012; Mellor et al., 2008). Likewise, qualitative studies of adolescents' experiences of philanthropic service suggest positive associations with self-esteem (Conrad & Hedin, 1989; Yates & Youniss, 1996), and more recent quantitative data support these patterns (Bang et al., 2020). The current study built on these findings to provide a novel test of prospective relations between children's prosocial behavior and self-esteem within childhood.

Existing developmental theory suggests that children's social behaviors may be important for their developing self-esteem (Harter, 2015). As described earlier, children's self-concept is tied initially to specific behaviors and skills (e.g., "I am good at sharing," Jennings, 2016), which aggregate as children form trait-level self-descriptions (e.g., "I am a kind person," Magro et al., 2019). Over time, children's descriptive self-concepts broaden to include global self-evaluations as good or bad, which are informed directly by both their own behaviors and by how those behaviors are viewed by others (Beane & Lipka, 1980; Manning, 2007). Because prosocial behavior is evaluated positively by both the self and others (Guo et al., 2018; Wang et al., 2019), we hypothesized that children's prosocial behavior in the developmentally-salient school setting would predict increased self-esteem across middle childhood.

1.4 | The current study

Adopting a strength-based perspective on maternal caregiving, social development, and self-esteem, this investigation evaluated a novel mediation model wherein we hypothesized that sensitive maternal caregiving during the preschool period at the age of four would promote positive child self-esteem at the age of eight directly, as well as indirectly via promotive effects on children's prosocial behaviors toward peers at the age of six. Using multiple methods and informants within a longitudinal design, this study sought to advance extant research on social development by positing children's social behavior, especially prosocial behavior, as a putative mechanism by which sensitive caregiving may influence child self-esteem.

In evaluating these hypotheses, this study addressed several ongoing gaps in the literature. First, although several studies have evaluated relational predictors and correlates of self-esteem in adolescence (e.g., Frank et al., 2010; Laible et al., 2004), comparatively less work has examined these associations *within* childhood. Thus, the first objective of this study was to test our hypothesis that sensitive maternal caregiving would predict increased self-esteem across childhood. Second, although extant theory suggests that children's social behavior and self-esteem should be associated (e.g., Memmott-Elison et al., 2020; Tashjian et al., 2020), few studies have assessed directional effects of children's social behavior on self-esteem within childhood. Thus, the second objective of this study was to test our hypothesis that children's prosocial behavior would be associated with increases in self-esteem across childhood. Finally, following a wealth of extant theory and research supporting positive associations between sensitive caregiving and prosocial behavior (e.g., Farrant et al., 2012; Williams & Berthelsen, 2017), the current study tested prosocial behavior as one mechanism by which sensitive caregiving may promote self-esteem in childhood.

Importantly, we sought to magnify the impact of our anticipated findings by focusing on the years encompassing children's transition to formal schooling. For most children, the transition to school introduces more numerous and varied social interactions with individuals beyond the family context, including peers and teachers (Sroufe et al., 1999). In addition to heightened opportunities for interpersonal interaction and impact, children's behavior during the transition to formal schooling sets the stage for their future experiences in and beyond the classroom as initial impressions and information may be communicated across grade-levels by students and teachers (Jerome et al., 2009; Johnson et al., 2000). Further, we evaluated these hypotheses in a large community sample of children who were diverse with regard to ethnicity and race, as well as gender and socioeconomic status. Thus, the current investigation was well-positioned to provide innovative, generalizable, and impactful insight into how children's social experiences and expressions in and beyond the family setting may relate to the development of their self-esteem.

2 | METHOD

2.1 | Participants

Participants were drawn from an ongoing longitudinal study of development among 250 caregiver-child dyads. Dyads completed assessments when the children were 4 years old ($N = 250$, $M_{age} = 4.085$, $SD = .249$) and 8 years old ($N = 211$, $M_{age} = 8.126$, $SD = .247$). In addition, teachers provided reports on each child at 6 years old ($N = 159$, $M_{age} = 6.106$, $SD = .215$). Children (50% females, 50% males) were diverse with respect to ethnicity and race (46% Latinx, 24.4% multiracial, 18% Black, 11.2% white, .4% Asian) and representative of the southern California community from which they were recruited (U.S. Census Bureau, 2008). Participating caregivers included biological mothers (91.4%), foster/adoptive mothers (3.6%), and grandmothers or other female kin caregivers (5.0%). Maternal education levels were variable (i.e., 19.8% of caregivers had not completed high school, 17.3% had a high school diploma or GED, and 62.9% had some technical training or college coursework). Just over half the caregivers were employed (55.6%), and the majority were married (61.6%) or in a committed relationship (18.8%). Socioeconomic status was calculated using the Hollingshead (1975) Four-Factor Index of Social Status ($M = 32.13$; $SD = 12.136$; i.e., semi-skilled employment, such as a salesclerk). Across waves, 221 (88.4%) dyads completed two or more assessments, and these dyads did not differ from those who did not return for follow-up on all study variables.

2.2 | Procedures

Caregivers were invited to participate in a longitudinal study of children's early learning and development via flyers placed in community-based childcare centers. Exclusionary criteria included children with diagnosed developmental disabilities or delays ($n = 3$), children who were unable to understand English ($n = 4$), and children outside the recruitment age of 45–54 months (not tracked). Dyads completed comprehensive laboratory assessments at the ages of four and eight, which included both questionnaires and observational tasks. Assessments were video recorded and survey measures were administered orally to all participants to mitigate concerns about English reading comprehension. Caregivers were compensated at a rate of \$25 per hour of assessment and children received a small gift after each visit. Informed consent was obtained from the child's legal guardian and assent was obtained from each child beginning at the age of eight. At the age of six, teacher questionnaires were sent by mail a minimum of 1 month following the child's entry into the classroom to ensure the teacher had sufficient time to become familiar with the child. Teachers were compensated with a \$20 gift card upon return of the questionnaire packet. All procedures were approved by the human research review board of the participating university.

2.3 | Measures

2.3.1 | Sensitive caregiving

At the age of four, each caregiver was video recorded interacting with the child during a series of semi-structured teaching tasks which were adapted from prior work (Block & Block, 1980). The tasks were designed to be just beyond the level of difficulty that the child could complete alone, and caregivers were instructed to help the child as much as they thought the child needed, while allowing the child to complete as much of each task as they could independently. These activities lasted 20 min and included (a) sorting beads by color and shape, (b) building blocks to match a model figure, (c) generating a list of things with wheels, and (d) completing a collaborative maze.

Independent coders who were naïve to other information about the families evaluated caregiving quality during each task using seven-point scales from 1 (*very low*) to 4 (*moderate*) to 7 (*very high*) taken from the Teaching Task Coding Protocol (Carlson et al., 1995; Egeland, 1982; Egeland et al., 1993). Coders were trained to reliability by the second author who was trained by the original authors of this coding protocol. Coders were six doctoral students and six advanced undergraduate or post-baccalaureate research assistants who resolved coding disagreements via weekly consensus meetings with four to six coders per case. Coding assignments were counterbalanced across tasks, coding teams were rotated, and ~10% of cases were coded by all teams to minimize carryover effects, ensure adherence to the coding protocol, and mitigate observer drift.

Consensus scores were averaged across tasks to index three facets of sensitive caregiving: support, intrusion (reverse scored), and hostility (reverse scored). Supportive presence captured the extent to which the caregiver provided a secure base for the child and remained attentive to the child's needs for the duration of the task ($M = 4.855$, $SD = .800$, $ICC = .806$). Intrusiveness assessed the extent to which the caregiver lacked respect for the child as an individual and failed to recognize the child's efforts to gain autonomy with higher scores connoting greater levels of intrusiveness. Intrusiveness was reverse scored, such that a 7 indicated very low intrusiveness and a 1 indicated very high intrusiveness ($M = 5.436$, $SD = .668$, $ICC = .750$). Hostility was indicated by the caregiver's expression of anger, discounting, or rejection of the child with higher scores reflecting greater hostility. Hostility was also reverse scored such that a 7 indicated very low hostility and a 1 indicated very high hostility ($M = 5.460$, $SD = .608$, $ICC = .797$).

Sensitive caregiving practices correlated strongly and positively such that supportive presence was associated with low intrusiveness (reverse-coded), $r = .58$, $p < .001$, and low hostility (reverse-coded), $r = .54$, $p < .001$, and caregivers rated low on intrusiveness were also likely to be rated low on hostility, $r = .41$, $p < .001$. Whether occurring in isolation or in tandem, each index of caregiving sensitivity (i.e., supportive presence, low intrusion, low hostility) promotes children's sense of security and safety in the parent-child relationship. Thus, consistent with prior research (Barnett et al., 2010; Carlson et al., 1995; Egeland et al., 1993), we created a composite measure of sensitive caregiving by taking the average of standardized ratings of supportive presence, intrusiveness (reverse coded), and hostility (reverse coded) across tasks ($\alpha = .770$).

2.4 | Self-esteem

Self-esteem was assessed at the ages of four and eight based on examiner reports and child self-reports, respectively. Examiners reported on children's self-esteem following the age of four assessment using the California Child Q-Sort (Block & Block, 1980) with common language updates provided by Caspi et al. (1992). Following 3 hr of face-to-face interaction with the participating child across a variety of tasks, doctoral student examiners who were trained extensively by the second author rated the child across 100 descriptors (e.g., *tends to become rigidly repetitive or immobilized when under stress, is self-confident and sure of self*) into a forced normal distribution on a 9-point scale from 1 (*highly uncharacteristic*) to 9 (*highly characteristic*). Ratings of each child across the 100 items were correlated with a

self-esteem prototype identified by seven psychologists who were asked to provide a Q-sort of the “ideal” child with high self-esteem using the same 100 items (see Waters et al., 1985, for description). The resulting correlation for each child indicates the degree to which that child was rated more (positive values) or less (negative values) like a prototypical child with high self-esteem. Q-sort methods to identify various child characteristics are used widely and are well-validated in diverse samples (Block, 2008).

At the age of eight, children completed select subscales of the 8–11 version of the Behavior Assessment System for Children-Second Edition (Reynolds & Kamphaus, 2004). Children reported on their self-esteem across five true/false items (e.g., *I think I am a good person*) and three additional items assessed on a four-point scale from 1 (*never*) to 4 (*almost always*; e.g., *I like the way I look*). Analyses were computed using BASC-2 self-esteem t-scores, which were calculated based on a nationally representative age-matched sample. Although self-report measures of self-esteem are preferred (Ederer, 2004), the BASC-2 is not approved for use with young children. Thus, we included examiner-ratings of child self-esteem at the age of four as the best available control for prior levels.

2.5 | Prosocial behavior

Prosocial behavior was assessed at the ages of four and six based on examiner and teacher reports, respectively. As described previously, examiners rated children on numerous characteristics following the age of four assessment using the California Q-sort personality inventory for children (Block & Block, 1980) with common language adjustments (Caspi et al., 1992). Two Q-sort items explicitly assess prosocial tendencies (i.e., *tends to give, lend, share, and is helpful and cooperative*; $r = .447$), and these were averaged to create an index of child prosocial behavior.

At the age of six, teachers were asked about children's behavior and performance in school using a series of mailed questionnaires. Teachers reported on children's prosocial behavior using the prosocial subscale of the Strengths and Difficulties Questionnaire (SDQ; Muris et al., 2003). Teachers indicated how true a series of five statements (e.g., *this child shares readily with other children, for example toys, treats, pencils*) were about the target child on a 5-point scale from 1 (*never true*) to 5 (*always true*; Cronbach's $\alpha = .896$). The SDQ is a widely used measure of prosocial behavior, which has demonstrated strong reliability and validity for participants from the preschool years through late adolescence (Croft et al., 2015; Mieloo et al., 2012; Van Roy et al., 2008), and across multiple gender and racial-ethnic groups (Hill & Hughes, 2007; Richter et al., 2011). Although the SDQ is a gold standard informant report for assessing prosocial behavior, it was not included in the current study until the age of six. Thus, we included examiner-ratings of child prosocial behavior at the age of four as the best available control for prior levels.

2.6 | Data preparation and analytic plan

All analyses were performed using the lavaan package in RStudio (Rosseel, 2012). Of the 250 participating children, 143 completed all data waves and 221 completed at least two assessments. Thirty-four (13.6%) children were missing teacher reports of prosocial behavior at the age of six because caregiver could not be contacted to obtain consent for researchers to contact teachers. An additional 58 (23.3%) children were missing prosocial data because teachers returned incomplete data ($n = 10$), the teacher could not be located ($n = 1$), caregivers refused our request to contact the teacher ($n = 2$), the child was homeschooled ($n = 1$), or the teacher did not respond ($n = 44$). Independent samples t-tests between children with or without teacher data revealed no significant differences in family SES, prosocial behavior at the age of four, or self-esteem measures. Likewise, chi-square analyses indicated there were no differences in child gender or ethnicity/race between children with or without teacher data. Forty-four (17.6%) children were missing self-esteem data because the age of eight visit was conducted over the phone with the caregiver only ($n = 6$) or because the family did not attend the age of eight visit ($n = 38$). There were no significant differences between those

TABLE 1 Descriptive statistics and bivariate correlations among study variables

	<i>M</i> (<i>SD</i>)	Skew (Kurtosis)	1	2	3	4	5
1. Family SES (the age of four)	32.130 (12.136)	.505 (−.193)	—	—	—	—	—
2. Prosocial Behavior (the age of four)	6.199 (1.523)	−.760 (.091)	.037	—	—	—	—
3. Self-esteem (the age of four)	.207 (.257)	−.471 (−.720)	.169*	.489**	—	—	—
4. Sensitive Caregiving (the age of four)	5.511 (.613)	−.830 (1.730)	.184**	.159*	.109	—	—
5. Prosocial Behavior (the age of six)	3.624 (.904)	.473 (−.208)	.208**	.202*	.150	.374**	—
6. Self-esteem (the age of eight)	50.144 (8.465)	1.157 (.983)	.176*	.292**	.250**	.281**	.298**

Note. * $p < .05$, ** $p < .01$. Prosocial behavior at the ages of 4 and 6 reflect examiner and teacher reports, respectively.

with and without self-esteem data on all study variables. Finally, there were no significant differences between those who provided data at all waves vs. those who did not.

Missing data were estimated using the full information maximum likelihood (FIML; Enders & Bandalos, 2001) procedure in RStudio. The pattern of obtained findings was consistent across both the raw (i.e., listwise deleted) and FIML analyses, though their significance varied due to the high rate of missing teacher data, which was comparable to teacher participation rates in other survey-based studies (Izzo et al., 1999; Youngstrom et al., 2003). Because all 250 participants were present at the first data wave, only endogenous variables were estimated.

3 | RESULTS

3.1 | Descriptive and bivariate analyses

Descriptive statistics and bivariate correlations for study variables are reported in Table 1. A multivariate analysis of variance (MANOVA) revealed no significant main effects of gender (Wilks' $\lambda = .981, p = .837$) and ethnicity/race (Wilks' $\lambda = .830, p = .146$), nor a significant gender*ethnicity/race interaction (Wilks' $\lambda = .855, p = .295$) on all continuous covariates and dependent variables (i.e., family SES, age of four sensitive caregiving, age of four self-esteem, age of four prosocial behavior, age of six prosocial behavior, age of eight self-esteem).

Bivariate analyses indicated that family SES correlated positively with observer ratings of sensitive maternal caregiving at the age of four, teacher reports of prosocial behavior at the age of six, and both examiner reports of child self-esteem at the age of four and child reports of self-esteem at the age of eight. Self-esteem at the age of four correlated positively with self-esteem at the age of eight. Prosocial behavior at the age of four correlated positively with concurrent sensitive caregiving, prosocial behavior at the age of six, and self-esteem at both the ages of four and eight. Sensitive caregiving at the age of four correlated positively with prosocial behavior at the age of six and self-esteem at the age of eight. Prosocial behavior at the age of six correlated positively with self-esteem at the age of eight.

TABLE 2 Indirect effect of sensitive caregiving on child self-esteem through prosocial behavior

Effect	B	SE	z	p	95% bias-corrected bootstrapped CI	
					LLCI	ULCI
child gender → prosocial behavior (the age of six)	.300	.130	2.309	.021	.045	.555
child gender → self-esteem (the age of eight)	−.159	1.135	−.140	.889	−2.383	2.065
child ethnicity/race → prosocial behavior (the age of six)	.430	.129	3.322	.001	.176	.684
child ethnicity/race → self-esteem (the age of eight)	−1.169	1.178	−.992	.321	−3.479	1.140
family SES → prosocial behavior (the age of six)	.009	.005	1.628	.104	−.002	.020
family SES → self-esteem (the age of eight)	.042	.047	.909	.363	−.049	.134
prosocial behavior (the age of four) → prosocial behavior (the age of six)	.025	.052	.485	.628	−.077	.128
prosocial behavior (the age of four) → self-esteem (the age of eight)	1.048	.458	2.287	.022	.150	1.946
self-esteem (the age of four) → prosocial behavior (the age of six)	.175	.310	.565	.572	−.432	.782
self-esteem (the age of four) → self-esteem (the age of eight)	2.917	2.735	1.066	.286	−2.444	8.277
sensitive caregiving → prosocial behavior (the age of six)	.456	.111	4.121	<.001	.239	.672
prosocial behavior (the age of six) → self-esteem (the age of eight)	1.932	.787	2.454	.014	.389	3.476
sensitive caregiving → self-esteem (direct)	1.970	.947	2.080	.038	.113	3.827
sensitive caregiving → self-esteem (indirect)	.880	.414	—	—	.069	1.692
$R^2 = .188, f^2 = .233$						

3.2 | Mediation analysis

Table 2 depicts the parameter estimates and 95% bias-corrected bootstrapped confidence intervals (CIs) for the predicted mediation model. Bootstrapping is a nonparametric technique that minimizes the influence of non-normality across study variables and yields a more reliable estimation of mediation than Sobel's (1982) test, particularly in smaller samples (Preacher et al., 2007). Observations of sensitive caregiving at the age of four predicted greater self-esteem at the age of eight via prosocial behavior at the age of six, over and above the impact of gender, ethnicity/race, SES, prior prosocial behavior, and prior self-esteem ($B = .880, p = .033, 95\% \text{ CI } [.006, .123]$; see Figure 1). The direct path from sensitive caregiving to child self-esteem also was significant ($B = 1.970, p = .038, 95\% \text{ CI } [.083, .332]$) while holding these covariates constant. Lavaan converged normally after 131 iterations.

4 | DISCUSSION

This investigation employed multiple methods and informants to evaluate prospective relations among sensitive maternal caregiving, children's prosocial behavior, and changes in child self-esteem across the transition to formal

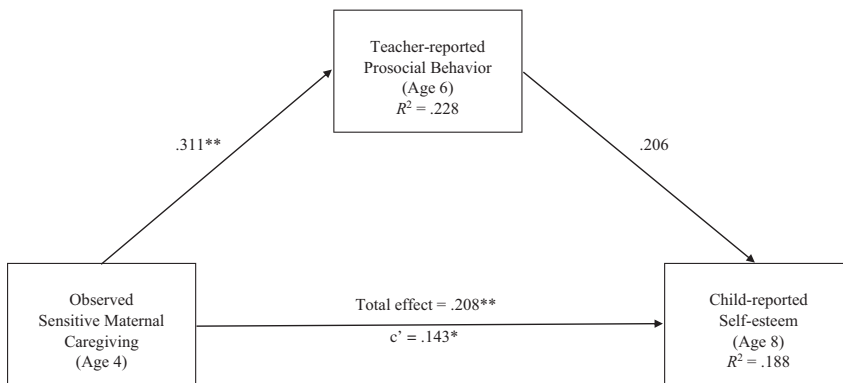


FIGURE 1 Mediation model of the influence of sensitive maternal caregiving on child self-esteem via prosocial behavior. Estimates are standardized regression coefficients. Covariates (not shown) include child gender, child ethnicity-race, family SES, prior self-esteem, and prior prosocial behavior

schooling. The present analysis supported our hypothesis that children whose maternal caregivers were warm, supportive, and confident in their child's ability to complete challenging tasks at the age of four would display greater prosocial behavior in the classroom as reported by teachers at the age of six, and greater self-reported self-esteem at the age of eight, over and above prior levels. Importantly, mediation analyses also supported well-established direct and positive relations between sensitive caregiving and self-esteem (e.g., Frank et al., 2010; Furnham & Cheng, 2000; Laible et al., 2004; Sroufe, 1989). The significance of this direct relation highlights the possibility that caregiving effects on children's self-esteem involve other processes beyond children's social behaviors with peers, such as attachment representations (Doyle & Markiewicz, 2005) or self-regulation skills (Perry et al., 2018).

Compared to the aforementioned relations between sensitive caregiving and child self-esteem (Frank et al., 2010; Furnham & Cheng, 2000; Laible et al., 2004; Sroufe, 1989), as well as the wealth of theoretical and empirical support for the promotive effect of sensitive caregiving on prosocial development (e.g., Farrant et al., 2012; Hojat, 2007; Williams & Berthelsen, 2017), the current finding that children's prosocial behaviors were positively related to gains in self-esteem is particularly novel. Prior theoretical assertions highlight children's active role in the construction of the self and self-esteem (Harter, 2015). However, most accounts of this developmental process have focused on children's construction of mental representations (i.e., internal working models) of the self and of the self-in-representation as shaping their self-esteem (Bretherton, 1987; Mikulincer, 1995). The current study took a unique approach by demonstrating that children's prosocial behaviors are a significant mechanism by which sensitive maternal caregiving can promote self-esteem. Consistent with child effect models of development (Bell & Harper, 1977), children's prosocial behavior may elicit positive reinforcement from social partners (e.g., praise from teachers, strong friendships with peers) that enhance the child's self-esteem. Indeed, empirical evidence suggests that prosocial behavior encourages strong relationships with teachers (Coulombe & Yates, 2018), peers (Son & Padilla-Walker, 2019), and caregivers (Newton et al., 2014). In turn, strong social relationships, including those beyond the family, are known to promote self-esteem (Furnham & Cheng, 2000; Raboteau-Saric & Sakic, 2014).

4.1 | Strengths and limitations

Although the current study benefitted from a rich, multimethod, multi-informant longitudinal dataset, several limitations necessarily qualify the interpretation of our findings. First, although we held examiner reports of children's prior self-esteem and prosocial behavior constant in these analyses, our inability to use exact controls (i.e., child self-reports

for self-esteem and teacher reports of prosocial behavior) for the study variables examined here limited our ability to infer causality.

Second, the absence of consistent measures of all study constructs at all data waves curtailed our ability to examine reciprocal relations among sensitive caregiving, child prosocial behavior, and child self-esteem. For example, although this study offers suggestive evidence of a directional link from children's prosocial behavior to self-esteem, these relations are likely bidirectional. The development of self-esteem is an active, constructive process (Harter & Leahy, 2001), one that reflects reciprocal exchanges among children's behavior and the behavior of others (Sroufe, 1989). The quality of early caregiving behavior forms the basis for children's internal working models, which encompass their representations of self, others, and social relationships (Bretherton, 1987). In turn, attachment (Ainsworth, 1989; Bowlby, 1969) and social information processing theories (Dodge & Crick, 1990; Lemerise & Arsenio, 2000) argue not only that children's mental representations inform their social behaviors, but also that contemporaneous social experiences can refine children's representations and information processing. Indeed, some evidence points to reciprocal relations from prosocial behaviors to mental representations (Laible et al., 2014). As children behave positively with others, social partners, including peers and caregivers, likely reinforce those behaviors with kindness and praise, which may contribute to children's positive self-evaluations. Although a recent study by Fu et al. (2017) found support for bidirectional relations between *adolescents'* prosocial behaviors and self-esteem, we were unable to evaluate these reciprocal relations *within* childhood.

Third, although these findings point to the importance of prosocial behavior directed at peers in school contexts for the development of self-esteem, we were not able to explore how these relations might operate in cases of prosocial behavior directed toward non-peer partners, such as caregivers and teachers. For example, high levels of child prosocial behavior directed toward caregivers may reflect marked insecurity in the caregiver-child relationship and, in turn, undermine children's self-esteem. Indeed, compulsive caregiving in the attachment relationship is a facet of parentified boundary dissolution wherein children set aside their own needs to care for family members (Earley & Cushman, 2002), and predicts a host of negative developmental outcomes, including psychopathology (Hooper et al., 2011), romantic relationship dissatisfaction (Baggett et al., 2015), and excessive guilt (Wells & Jones, 2000). Future research should explore potentially differential associations between prosocial behavior directed at various targets (e.g., peers, teachers, caregivers, strangers) and child self-esteem. Further, although the SDQ is one of the best-validated and most commonly used measures of prosocial behavior (Hill & Hughes, 2007; Richter et al., 2011), informant reports carry a risk of bias, especially when assessing prosocial behavior (Phillips & Lonigan, 2010). Thus, future research will be strengthened by using multiple informants and methods, including observational measures to corroborate informant reports of prosocial behavior.

Fourth, although we had conceptual justification and empirical precedence for combining our three indices of sensitive caregiving (i.e., supportive presence, intrusion, hostility; Carlson et al., 1995; Egeland, 1982; Egeland et al., 1993), future investigations should examine whether and how specific facets of the caregiving milieu may influence children's social behavior and self-esteem. Of note, a series of *post-hoc* analyses with the current data did not reveal different associations between each index of sensitive maternal caregiving and children's prosocial behavior or self-esteem. Relatedly, the current study focused specifically on *maternal* caregiving behavior. Future studies of social development would benefit from examinations of fathers and other caregivers (c.f., Leidy, 2013), particularly given apparent differences in the impact of mothering and fathering as a function of child gender and age (Newland et al., 2013; Verhoeven et al., 2012).

Finally, the obtained associations may have varied by sociodemographic factors in ways that were not initially examined in this study. For example, prior evidence points to differences in the rate and expression of prosocial behavior across groups defined by gender (McMahon et al., 2006; Veenstra et al., 2008), ethnicity and race (Armenta et al., 2011; Trommsdorff et al., 2007), and socioeconomic status (Benenson et al., 2007; Chen et al., 2013). Likewise, prior evidence points to higher levels of self-esteem among males (Bleidorn et al., 2016; Kling et al., 1999), those from individualistic cultures (Flynn, 2016), and those from high socioeconomic backgrounds (Twenge & Campbell, 2002). In addition to controlling for each of these factors in the present analyses, we conducted *post-hoc* multigroup analyses, which

revealed no group differences by gender or socioeconomic status. Although a *post-hoc* test of the hypothesized mediation model within the subsample of 115 Latin families fully replicated the reported findings, we were unable to explore potential differences across ethnic and racial groups due to the limited sample of participants in each of the other ethnic and racial groups. Future studies should examine the potential influence of ethnicity and race on these associations. Further, given the salience of intersectionality in development (Warner & Brown, 2011), researchers should conduct multivariate analyses to explore interactive relations among gender, ethnicity and race, and socioeconomic status.

4.2 | Implications for future research and practice

The current study extends the robust body of theoretical and empirical literature indicating that sensitive caregiving promotes both child self-esteem (e.g., Frank et al., 2010; Özdemir et al., 2017; Sroufe, 1989) and prosocial behavior (Beier et al., 2019; Farrant et al., 2012; Newton et al., 2016). Moreover, the obtained findings implicate prosocial behavior as a novel mechanism underlying relations between sensitive maternal caregiving and increased self-esteem within childhood. The identification of this mechanism may be especially relevant to intervention efforts aimed at promoting positive child development. For example, interventions to promote sensitive caregiving can contribute to children's positive behavioral and socioemotional adjustment, with the effect on social behavior explaining some caregiving effects on self-esteem. Already, interventions aimed at increasing parental warmth have shown positive associations with children's prosocial behavior (i.e., cooperation; Landry et al., 2008). The current study suggests these behavioral effects may also contribute to gains in self-esteem across childhood.

In addition to caregiving, this study illuminates children's social behavior as a promising point of intervention. Several interventions teach prosocial behavior to children as a means of improving the social climate in school (i.e., encouraging collaborative problem solving, decreasing bullying and violence; Caprara et al., 2014; Kilian et al., 2007). This study suggests that there may be auxiliary benefits of such interventions for children's self-esteem.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. Data are not publicly available as other projects with this dataset are ongoing.

ORCID

Brianne R. Coulombe PhD  <https://orcid.org/0000-0002-6185-251X>

Tuppert M. Yates PhD  <https://orcid.org/0000-0002-0907-8520>

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