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Relationships as Malleable Factors for Children's Social-Behavioral Skills from Preschool to Grade 1: A Longitudinal Analysis

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ABSTRACT

Social-behavioral functioning during early childhood is associated with children's academic and social success concurrently and over time. This study explored how concurrent, year-to-year, and sustained parent-teacher and student-teacher relationships predicted children's social skills and problem behaviors across the preschool to Grade 1 transitions. Participants were 233 children ($M = 5.32$ years [$SD = 0.27$] in preschool), their parents, and their preschool ($n = 65$), kindergarten ($n = 116$), and first grade ($n = 117$) teachers enrolled in low-income public schools in rural and urban communities. *Research Findings:* Children's relationships with teachers were associated with social-behavioral functioning immediately and over time. Positive, sustained relationships from preschool through first grade predicted social-behavioral benefits. Conflictual relationships related to higher problem behaviors. Parent-teacher relationships as reported by teachers predicted children's positive social-behavioral functioning in the same year. Parents' reports of close relationships with teachers predicted more problem behaviors in the following year. Sustained relationships between parents and teachers during the transition from preschool through first grade predicted improved social skills and fewer problem behaviors over time. *Practice or Policy:* Providing targeted training and support for educators to develop and maintain relationships with students and parents can improve social-behavioral outcomes for children across the preschool to 1st grade transition.

Despite findings linking high quality early childhood education experiences to positive developmental outcomes, many children, especially those from disadvantaged households, experience academic and social difficulties as they enter school. All too often, the gap between children growing up in low-income households and same age non-disadvantaged peers widens as they progress from preschool into elementary school and beyond (Gillanders et al., 2014). Because foundational social-behavioral competencies are highly predictive of later success, early gaps in social and behavioral skills have implications for long-term outcomes. The purpose of this study is to explore the role that relationships play in predicting children's early social-behavioral competencies within and across early-grade transitions in a sample of children from low-income households. Special attention is given to the predictive power of relationships on outcomes, as relationships are malleable and can be targeted in prevention, intervention, and policy to promote children's success and well-being.

Social skills are considered among the requisite skill sets determining a child's readiness for school, as proficiencies in social competencies during preschool predict an easier transition to kindergarten and first grade (McWayne et al., 2009). Social competencies in early childhood include the ability to initiate social interactions, recognize and respond to other's emotions and social cues appropriately,

and exhibit prosocial behavior (Hilppö et al., 2016). Early competencies in social-emotional functioning predict success in future relationships (Jaffari-Bimmel et al., 2006), academic achievement (Ansari, 2018; Kwon et al., 2012), and graduation from high school (Véronneau et al., 2008). However, children living in low-income conditions and minoritized children may experience less optimal social skill development and demonstrate more challenging behaviors due to systemic and structural factors external to the child, such as inequitable access to resources, racial/ethnic discrimination, increased chaotic life experiences, and greater levels of stress (Bobbitt & Gershoff, 2016; Cave et al., 2020; Creavey et al., 2018). Identifying malleable, or changeable, factors that may mitigate negative systemic influences on children's social and behavioral development is of utmost importance, especially for children experiencing low-income conditions and racially/ethnically minoritized children.

Children exhibiting challenging behaviors often have difficulty managing expectations in preschool and transitioning across the early school years (Rimm-Kaufman et al., 2000). Early behavior problems have been found to be negatively associated with academic skills over time (Bierman et al., 2013; Grimm et al., 2010), exacerbating the risk for poor long-term developmental and social outcomes. Specifically, problem behaviors in early childhood are related to future expulsions/suspensions, negative school attitudes (Gilliam, 2016), academic delays (McClelland et al., 2006), peer rejection (Wood et al., 2002), and poor mental health (Gonzales-Ball & Bratton, 2019), to name a few. Therefore, identifying malleable factors, (i.e., aspects of the educational environment that are policy-amenable or able to be changed by educational stakeholders) is critical to informing efforts to promote social skills and reduce problem behaviors as children transition through preschool and the early grades (Welchons & McIntyre, 2017).

Ecological theory (Bronfenbrenner, 1979) posits that several environmental systems (e.g., microsystem, mesosystem, exosystem, macrosystem, chronosystem) and contexts influence young children's social learning and behavior. The microsystem comprises the child's immediate environments (e.g., home, school) and interactions that take place within these environments. The development of children's social skills and problem behaviors are highly responsive to the quality of relationships within each microsystem (e.g., parent-child and student-teacher). Relationships, such as those that dynamically occur between children and their teachers, contribute to children's development (J. N. Hughes & Im, 2016) and may be an important malleable factor for improving children's social-behavioral functioning. In addition, continuity across environmental contexts, brought about in part by connections between parents and teachers, is predictive of prosocial development (Powell et al., 2010). Like practices invoked by teachers and parents to augment children's experiences at home and school, intentional efforts to enhance relationships between parents and teachers across home and school settings have been found effective (Sheridan et al., 2012, 2017). Thus, the establishment of cohesive relationships between parents and teachers may be another malleable factor at the mesosystem level associated with children's social-behavioral competencies.

Bronfenbrenner's notion of the chronosystem acknowledges patterns of change over time in environmental events and life course transitions (such as typical variations in practices from preschool to elementary school, or historical events impacting children's experiences). The influence of events or relationships occurring at various ecological levels (e.g., within the microsystems of home and school, or across the home-school mesosystem) on children's development is determined in part by how these occurrences interact with the passage of time. The transition from preschool to early elementary school can be a "sensitive period" for young children; events and interactions throughout this timely progression likely impact future educational trajectories (Rimm-Kaufman & Pianta, 2000; Wildenger & McIntyre, 2012). Thus, an understanding of malleable factors not only at one static point in time (i.e., concurrently), but as experienced over the course of early development (i.e., in a lagged or sequential manner) is necessary. This study will identify (a) concurrent relationships between experiences at one point in time and children's social and behavioral functioning simultaneously; (b) lagged associations whereby experiences in one year might contribute to child outcomes in subsequent years; and (c) children's cumulative experiences over the preschool through first-grade time period (i.e., sustained), and their influence on overall social skills and problem behaviors.

Relationships as Key Malleable Factors

Relationships during children's early schooling are important for learning and social-behavioral development. Children's relationships with teachers and the relationships between parents and teachers present unique contexts that can either promote or deter healthy child development. Indeed, extant research has demonstrated connections between these relationships and children's outcomes in academic, language, and social-behavioral domains and have particular salience for low-income children (for reviews see Barger et al., 2019; Sabol & Pianta, 2012). Most importantly, student-teacher and parent-teacher relationships are *malleable* (Aasheim et al., 2018; Driscoll & Pianta, 2010) and thus can be altered through relationship-focused interventions to bolster children's development (Sheridan et al., 2019, 2013, 2017).

Student-Teacher Relationships

Teacher sensitivity and support, characterized by warmth and nurturance in the student-teacher relationship, facilitate positive development by promoting children's emotional security and adjustment (Thijs et al., 2011). Closeness, or the degree of warmth or openness (Pianta, 2001) in student-teacher relationships provides a supportive context for children to become motivated to follow social norms and engage in learning and social exploration, thus building capacities and skills for academic and social success. On the contrary, conflict, or the degree of discordance and coerciveness (Pianta, 2001) within student-teacher relationships may impede children's motivation for following social norms and decrease their capacities for success. Therefore, teachers that intentionally engage in practices that foster positive, warm, and supportive relationships with their students facilitate student well-being and success.

Ample empirical evidence exists confirming the connection between student-teacher relationships and children's academic and social outcomes. Although student-teacher relationships are dynamic and bidirectional, with both teacher and child characteristics and behaviors influencing these relationships (Acar et al., 2020; Skalická et al., 2015), this study focuses on the impact of student-teacher relationships on children's outcomes as a potential malleable factor for future intervention. High-quality student-teacher relationships in elementary school are linked to concurrent and future academic achievement in math and reading (Hajovsky et al., 2017; Maldonado-Carreño & Votruba-Drzal, 2011; McCormick et al., 2013). For low-income students, relationships with teachers are particularly important at promoting positive outcomes (Lee & Bierman, 2015). Further, children who have close and secure relationships with teachers tend to show more emotion knowledge and regulation, better peer social skills, and higher levels of prosocial behavior than children who have conflictual relationships (Cadima et al., 2015; Denham et al., 2012).

Conversely, conflict in student-teacher relationships is associated with lower math achievement (Crosnoe et al., 2010), lower language and literacy achievement (Rucinski et al., 2018), declines in prosocial behavior in children (Marengo et al., 2018), and increases in behavior problems (Acar et al., 2018; Rucinski et al., 2018). A recent study using a nationally representative sample of young children found that low closeness and high conflict within teacher-student relationships, in combination with low class-level positive behavior, corresponded to lower teacher-rated self-regulation (Zakszeski et al., 2020). Moreover, the influence of larger ecological systems such as the classroom environment appear to operate on children's outcomes through teacher-student relationships (Moen et al., 2019), suggesting again that the relationships that develop within larger systems are significant influencers in development.

There is a growing but scarce research base exploring how children's experiences vis à vis student-teacher relationships over time impact their developmental outcomes (Bosman et al., 2018; O'Connor et al., 2012). It appears that the continuities in quality of student-teacher relationships over time may be especially influential for children's academic achievement. For instance, Spilt et al. (2012) found that stable and high levels of conflict within student-teacher relationships across the elementary school years were more strongly associated with low achievement compared to increasing or

decreasing trajectories of relationship quality. In another study, trajectories in conflict and closeness from preschool to fifth grade predicted children's externalizing and internalizing behaviors in fifth grade (O'Connor et al., 2012). To our knowledge, O'Connor and colleagues are the only researchers to have explored student-teacher relationship quality over time and its influence on social-behavioral rather than academic outcomes. It is necessary to further explore the cumulative influence of relationship quality over time on social-behavioral outcomes.

Parent-Teacher Relationships

Parent-teacher relationships provide yet another critical relational context for children's development and success. Positive parent-teacher relationships, characterized by feelings of trust, respect, support, sensitivity, and cooperation (Vickers & Minke, 1995), are important resources for providing children with mutual learning experiences and promoting development across home and school contexts. Coordinated relationships between home and school result in a synergistic effect on development (Christenson, 2003), whereas disconnects in children's experiences across settings may result in challenges to development, as children are required to negotiate between microsystems that are at odds.

Previous empirical research has demonstrated links between parent-teacher relationship quality and children's academic and social outcomes. In a study of preschool-aged children, high quality parent-teacher relationships (i.e., relationships with mutual feelings of trust, collaboration, affiliation, and caring) were associated with increased levels of children's early learning, object play, and social competence (Elicker et al., 2013). Further, parent-teacher relationship quality as reported by children's first-grade teacher was associated with academic achievement in second grade (J. Hughes & Kwok, 2007). Studies examining social-behavioral outcomes of elementary students have found that higher levels of parental trust in their children's teachers was concurrently associated with increased prosocial behavior, decreased peer problems, and decreased behavioral difficulties (Santiago et al., 2016). For children from low-income families, a positive parent-teacher relationship may serve as an important protective factor for improved social-behavioral outcomes (Serpell & Mashburn, 2012). However, there are often practical, cultural, and systemic barriers to establishing positive parent-teacher relationships, particularly for low-income and ethnically/racially minoritized families. Barriers might include language differences, scheduling conflicts, lack of family transportation, teacher perceptions and biases, and differing expectations (Grace & Gerdes, 2019; Nzinga-Johnson et al., 2009; Turney & Kao, 2009).

Despite barriers to establishing positive home-school relationships, research exploring the efficacy of interventions targeting relationships and continuity between home and school via coordinated planning and problem solving found positive effects for children's social skills, adaptive functioning, and behavioral outcomes (Sheridan et al., 2012, 2013, 2017). Importantly, improvements in the relationship between parents and teachers mediated the effects of the partnership intervention, suggesting that planful efforts to promote parent-teacher relationships and consistent approaches across home and school function together to enhance children's social-behavioral outcomes. However, there is limited research examining the effects of sustained relationship quality over transitions from preschool to the early elementary grades on children's outcomes. Like student-teacher relationships, sustained parent-teacher relationships may reveal unique implications for development; thus, it is crucial to examine how cumulative experiences of the parent-teacher relationship contribute to children's social-behavioral development.

The Current Study

The purpose of the current study is to identify the role that relationships play in predicting children's social-behavioral skills within and across transitions from preschool to Grade 1. This study extends the literature by exploring the extent to which quality in the student-teacher and parent-teacher relationship is associated with concurrent and subsequent social-behavioral skills, and how the quality of

relationships that children experience across time influences social-behavioral outcomes. Understanding how children's cumulative experiences in student-teacher and parent-teacher relationships across time relate to their social-behavioral outcomes (i.e., social skills and problem behaviors) is critical for informing educational practices and interventions and fostering children's long-term social-behavioral success. Specific research questions are as follows:

- (1) Do parent-teacher and student-teacher relationships concurrently predict children's social skills and problem behaviors in preschool and the early primary grades?
- (2) Do parent-teacher and student-teacher relationships in preschool and kindergarten predict children's social skills and problem behaviors the following academic year?
- (3) Do sustained relationships across the preschool through first-grade transition predict children's social skills and problem behaviors over time?

Given previous research that details the significant associations of relationships with adults to children's well-being, we hypothesized that both concurrent and sustained relationships would contribute to children's social-behavioral success, including improved social skills and reduced problem behaviors in preschool and the early primary grades.

Method

Participants

Participants were enrolled in a longitudinal study intended to examine the learning experiences of typically developing children in rural and urban communities in the Midwest. Data were collected across the preschool through first-grade transition. The participants in the study were 233 English and Spanish speaking children enrolled in the fall of preschool, their parents/primary caregivers, and their preschool ($n = 65$), kindergarten ($n = 116$), and first grade ($n = 117$) teachers (see Recruitment procedures, below).

The 233 children were selected out of a possible 252 preschool children who participated in the longitudinal study. Seven cases were excluded from this study because the children did not progress through the grades in the "usual" way (i.e., either they repeated a grade or skipped a grade). Two cases were excluded because they dropped out of the study before the spring preschool assessment. Seven additional cases were excluded because they did not have data on one or more of the covariates included in this study. Two cases were excluded because they did not have teacher-report data on the study variables for the preschool, kindergarten, and first-grade time points, and one case was excluded because the child did not have parent-report data for the target data collection time points.

At the first data collection point (spring of preschool), the average age of participating children was 5.32 years ($SD = 0.27$ years) and 53% were girls. The participating children were identified by their parents as primarily White/Non-Hispanic (43%) and the primary language spoken at home with the child by most participants was English (74%). Seventy-eight percent of participating families were considered low income, defined as living at or below 150% of the federal poverty level and/or receiving public aid (e.g., welfare, Temporary Assistance for Needy Families, or general assistance; food stamps; Women, Infants, and Children assistance; unemployment insurance; Supplemental Security Income or Social Security Retirement, Disability, or Survivor's benefits). Most participating parents (81%) reported holding less than a 4-year college degree. See [Table 1](#) for complete family demographic information.

Teachers across all grade levels (preschool, kindergarten, first grade) were primarily White/Non-Hispanic (93.8%, 93.9%, and 90.4% across grades, respectively) and female (98.5%, 99.1%, and 97.4%, respectively). The mean years of teaching experience was 12.36 years ($SD = 9.07$) for preschool teachers, 14.24 years ($SD = 10.08$) for kindergarten teachers, and 11.54 years ($SD = 9.01$) for first-grade teachers.

Table 1. Family demographics ($N = 233$).

	(%)
Child gender	
Female	52.79
Male	47.21
Child race/ethnicity	
Black/Non-Hispanic	16.74
Hispanic/Any Race	28.76
Other Race/Non-Hispanic	11.59
White/Non-Hispanic	42.92
Language spoken most at home with child	
Only English	73.82
Other	26.18
Parent relationship to child	
Mother	90.04
Father	7.79
Other	2.16
Parent race/ethnicity	
Black/Non-Hispanic	17.32
Hispanic/Any Race	24.68
Other Race/Non-Hispanic	6.06
White/Non-Hispanic	51.95
Parent education (highest degree)	
<High School diploma	11.16
High School diploma/GED	26.18
Some college/2-year degree	43.78
≥4-year degree	18.88
Income status	
>150% FPL & no support	21.89
≤150% FPL &/or government support	78.11

Covariates were constructed using information from preschool through 1st grade time points. Language spoke most at home = Always only English across time points vs. other at one or more time points. Parent education = highest degree across time points. Income status = Always > 150% FPL and no support across time points vs. ≤ 150% FPL &/or government support at one or more time points. Percentage may not round to 100 due to rounding error.

Setting

Participants were recruited from preschool classrooms in 36 schools in 12 rural and two urban communities in one mid-western state, as defined by the National Center for Education Statistics Office of Management and Budget (Schneider, 2006). School districts were identified and recruited into the study based on the following criteria: (a) 40% or more of students within the district were eligible for free and reduced-price lunch, and (b) the district provided public preschool services. For school districts with more than one primary school, Title I schools were selected to participate in the study. Two Head Start programs operated by community agencies were also included to increase the number of rural participants. Schools were located in geographically diverse locations throughout the state. Children were attending either a public school district preschool or a Head Start program at the time of enrollment. Twenty-nine of the 233 preschool children transitioned out of their initial school district into new districts in kindergarten and first grade, yielding a total representation of 19 public school districts and 6 private/parochial schools when children were in kindergarten, and 18 public school districts and 6 private/parochial schools when they were in first grade.

Measures

The present study assessed malleable relationships across home and school environments (i.e., parent–teacher relationship, student–teacher relationship) at each time point. Parent–teacher relationships were collected using a measure completed by parents and teachers. Student–teacher relationships were

collected using a teacher self-report measure. Child outcomes (i.e., social skills and problem behaviors) were assessed each year using a measure completed by parents and teachers. Descriptive statistics by time point are provided in Table 2.

Malleable Factors

Parent–Teacher Relationship. The *Parent–Teacher Relationship Scale* (PTRS; Vickers & Minke, 1995) assesses perceptions of the parent–teacher relationship from the perspective of the parent (using the parent version) and the teacher (using the teacher version). Both the parent and teacher versions contain 24 items that assess two specific relationship constructs: joining (affective aspects of the relationship, such as mutual respect, dependability, and shared expectations) and communication-to-other (structural aspects of the relationship, including respondent’s view of their communicative contribution to the relationship). The scale assesses the overall quality of the parent–teacher relationship and contains two factors based on the aforementioned constructs, Joining and Communication-to-other. Each item is scored on a 5-point Likert-type scale and rated as: 1 = *Almost Never*; 2 = *Once in a While*; 3 = *Sometimes*; 4 = *Frequently*; 5 = *Almost Always*. Given the current study’s focus on parent and teacher perspectives of the affective nature of their relationship, only the Joining factor (i.e., affective relationship quality) was explored in this study. Example items include *We trust each other*, and *We understand each other*. For this study, internal consistency of scores was high for each time point for both parents and teachers (i.e., $\alpha = .79$ – $.87$ and $\alpha = .93$ – $.95$, respectively, for Joining).

Student–Teacher Relationship. The *Student–Teacher Relationship Scale* (STRS; Pianta, 2001) is a 28-item teacher self-report instrument used to assess teacher’s perception of his or her relationship with a student, a student’s interactive behavior with the teacher, and a teacher’s beliefs about the student’s feelings toward the teacher. The teacher rates the extent to which each item applies to his or her relationship with a particular student. Each item is scored on a 5-point Likert-type scale and rated as: 1 = *Definitely does not apply*; 2 = *Does not really apply*; 3 = *Neutral, not sure*; 4 = *Applies somewhat*; 5 = *Definitely applies*. Example items include *If upset, this child will seek comfort from me*; *This child values his/her relationship with me*; and *This child easily becomes angry with me*. The measure is scored by summing groups of items based on three factors that capture dimensions of student–teacher relationships including Conflict, Closeness and Dependency. The Dependency dimension was not included in this study due to poor reliability. For this study, internal consistency of scores was high for each time point (i.e., $\alpha = .91$ – $.92$ for Conflict and $\alpha = .76$ – $.87$ for Closeness).

Table 2. Descriptive statistics for malleable factors and child social-behavioral skills.

	Preschool		Kindergarten		1 st Grade	
	N	M (SD)	N	M (SD)	N	M (SD)
Malleable factors						
Parent-reported affective parent–teacher relationship	233	4.69 (0.38)	222	4.56 (0.51)	221	4.58 (0.46)
Teacher-reported affective parent–teacher relationship	231	4.65 (0.56)	186	4.48 (0.63)	173	4.42 (0.68)
Teacher-reported student–teacher conflict	232	1.43 (0.67)	189	1.57 (0.72)	179	1.57 (0.75)
Teacher-reported student–teacher closeness	232	4.53 (0.41)	189	4.20 (0.61)	179	4.19 (0.49)
Child social-behavioral skills						
Parent-reported social skills	233	2.31 (0.36)	222	2.34 (0.39)	221	2.33 (0.38)
Teacher-reported social skills	232	2.38 (0.46)	189	2.18 (0.48)	176	2.19 (0.51)
Parent-/teacher-reported social skills (combined) ^a	232	0.12 (0.94)	188	−0.07 (1.03)	176	−0.09 (1.03)
Parent-reported problem behaviors	233	0.57 (0.39)	222	0.53 (0.40)	221	0.57 (0.44)
Teacher-reported problem behaviors	231	0.33 (0.42)	189	0.42 (0.42)	177	0.44 (0.44)
Parent-/teacher-reported problem behaviors (combined) ^a	231	−0.07 (0.96)	188	−0.01 (0.99)	177	0.11 (1.05)

Parent-teacher and student–teacher relationship scores have a possible range of 1 (least positive) to 5 (most positive). Child social skills have a possible range of 0 (least skill) to 3 (most skill). Child problem behaviors have a possible range of 0 (least problem) to 3 (most problem). ^aCombined scores were computed as the average of the parent and teacher z-scores (each standardized to have $M = 0$ and $SD = 1$ across waves).

Child Social-Behavioral Outcomes

The *Social Skills Improvement System* (SSIS; Gresham & Elliott, 2008) is a norm-referenced series of scales completed by teachers and parents that document positive social skills and problem behaviors in children (Gresham & Elliott, 2008). There are 46 items within the Social Skills domain for both parents and teachers; the Problem Behaviors domain contains 33 items for parents and 30 items for teachers. Example items include *Follows directions* and *Shows concern for others*. Respondents indicated the frequency with which the child displays each social skill or problem behavior using a 4-point Likert-type scale ($N = \text{Never}$, $S = \text{Seldom}$, $O = \text{Often}$, or $A = \text{Almost Always}$). For this study, internal consistency of scores was high for each time point (i.e., $\alpha = .95-.96$ for parent-reported social skills, $\alpha = .93-.95$ for parent-reported problem behaviors, $\alpha = .97-.98$ for teacher-reported social skills, and $\alpha = .95-.96$ for teacher-reported problem behaviors).

For the current study, composite scores were created for each child by averaging parent and teacher report of social skills (SS Composite) and problem behavior (PB Composite) at each time point. Scores were standardized prior to computing the average to account for differences in the number of items on the parent and teacher report forms. This approach was desirable for a number of reasons. First and foremost, this study is focused on understanding the development of children's social skills across school and home settings, versus skills as perceived in one setting only. Previous research has noted that social-behavioral skills are context-specific (Gresham et al., 2010); as such, using composite scores provided an opportunity to represent both parent and teacher perceptions within home and school environments without losing information provided by either informant, as indicated by the test authors (Gresham et al., 2010, 2018). Second, using composite scores for the child social-behavioral outcomes helped alleviate concerns related to shared method variance between the malleable factors and outcomes. Third, retaining ratings from informants within the school and home separately (i.e., teachers and parents) across outcome variables would have yielded multiple complex models, whereas the use of composite (school and home) scores allowed for the consideration of perceptions of children's behaviors at both school and home with a more parsimonious model. Finally, previous research suggests modest convergent validity evidence for parents' and teachers' ratings of social skills (.30) and problem behaviors (.31), further supporting the use of a simple composite score (Gresham et al., 2010). In the current study, correlations between parent- and teacher-reported social skills ranged from .23 to .37, and from .21 to .30 for problem behaviors. Though modest, these correlations suggest shared variance across parent and teacher report of social skills.

Covariates

Covariates included salient demographic variables that are known to influence students' social and behavioral outcomes. All covariates were constructed from preschool through first grade demographic information. Geographic location (urban or rural) of each child's school was determined using the definition espoused by the National Center for Educational Statistics (Schneider, 2006)) definitions with communities defined as town and rural comprising the rural category and those defined as cities and suburbs comprising the urban category. Family low-income status (no or yes) was calculated from parent report and was defined as living at or below 150% of the federal poverty level and/or receiving public aid at any data collection time point. Non-English home language (no or yes) was reported by parents as primarily speaking a language at home to their child that is not English at any data collection time point. Child age was calculated as age in years at time of each data collection point. Child gender (male or female) was reported by parents at the time of first data collection point. Primary caregiver highest education level was self-reported, and included five categories (i.e., less than a high school diploma, high school diploma/GED, some college, 2-year degree, and bachelor's degree or higher). Caregiver highest education level was calculated using the highest reported education across all data collection time points. Child race/ethnicity was reported by parents and included four categories: White, Hispanic, Black/African American, and others.

Procedures

Recruitment

Once schools were enrolled, all preschool teachers in participating schools were invited to participate. Participating teachers then sent a notice home to all eligible children seeking permission to share contact information with the study team. Because this study focuses on the experiences and outcomes of typically developing children, those who were eligible for or enrolled in special education in preschool were not included; however, if a child qualified for special education in subsequent years, they were retained in the study. To ensure adequate measures, only children and parents who were fluent in spoken English or Spanish were included. The study team randomly selected up to five children from the pool of parents who had granted permission, contacted the parents, described the study, invited them to participate, and obtained consent. In the case that a parent declined participation another parent was randomly selected and invited to participate. One to five children per classroom were enrolled. Kindergarten and first-grade teachers were invited to participate when at least one participating child was assigned to their classrooms at the start of the school year. For children who transitioned to schools different from where they attended preschool, district and building administrator permission was obtained prior to contacting teachers.

Data Collection

Data were collected at three time points: the end of the spring semesters of children's preschool year (Time 1 [T1]), kindergarten year (Time 2 [T2]), and first-grade year (Time 3 [T3]). All measures for the current study were collected via a survey format. Participating teachers at all grade levels were sent an e-mail containing a link to a secure web-based platform. Parent participants completed their surveys during a face-to-face meeting with a research assistant at their home, their child's school, or another preferred location. Face-to-face meetings for parents were used to avoid limitations due to internet or digital device access. Bilingual research assistants collected Spanish measures. Sixteen percent of families completed the survey in Spanish at T1, 17% at T2, and 16% at T3 with the remainder of families completing the survey in English.

Analytic Plan

Cross-classified multilevel modeling was performed to address the study questions. Random effects were necessary to account for repeated observations nested within children, and children changing classrooms and schools across the preschool to first-grade years. The full statistical model is detailed in the Appendix. The outcome variable was either child social skills or problem behaviors, depending on the model. Fixed effects were included for time, covariates, and malleable factors (i.e., parent- and teacher-reported parent-teacher affective relationship or teacher-reported student-teacher conflict and closeness, depending on the model). Concurrent associations were explored to address Research Question 1, lagged associations were measured at the previous time point to explore Research Question 2, and sustained associations were averaged across time in response to Research Question 3.

Data were analyzed in the SAS/STAT® 14.1 software environment (SAS Institute Inc, 2015) via the MIXED procedure. The MIXED procedure retains all cases for analysis that have data on the time-invariant predictors and at least partial data on the time-varying predictors and outcomes (resulting in an analytic sample of 233, or $100 \times 233/245 = 95.1\%$ of the children who did not repeat or skip a grade). Multiple imputation (MI) was not performed due to the small percentage of dropped cases (<5%) and the complexity of the design, for which MI methods are not fully developed and tested. Restricted maximum likelihood (REML) was used for estimation, with the Kenward-Rogers approximation used to obtain denominator degrees of freedom and standard errors. Statistical significance was set at $\alpha = .05$. R^2 and change in R^2 were used as measures of global practical significance. In addition, the outcome and malleable factor variables were standardized to obtain standardized coefficients as an indicator of practical significance.

Results

Taken together, parents' and teachers' perceptions of their relationship with each other uniquely accounted for 12% (total $R^2 = .20$) and 26% (total $R^2 = .26$) of the variability in children's social skills and problem behaviors, respectively. Teachers' perceptions of their relationship with the child uniquely accounted for 37% (total $R^2 = .46$) and 45% (total $R^2 = .47$) of the variability in children's social skills and problem behaviors, respectively. See Tables 3–6 for complete model results.

Do Parent–Teacher and Student–Teacher Relationships Concurrently Predict Children's Social Skills and Problem Behaviors in Preschool and the Early Primary Grades?

The first research question addressed associations between parent-teacher and student-teacher relationships and children's social skills and problem behaviors each year from preschool through first grade. Controlling for the other variables in the model, teachers' positive perceptions of their relationships with parents during a given school year were positively associated with children's social skills ($\hat{\beta} = .15, p < .001$, Table 3) and negatively associated with children's problem behaviors ($\hat{\beta} = -.11, p < .001$, Table 4) during that same school year. That is, children were reported to display greater social skills and fewer problem behaviors during years that their teachers rated more positive affective relationships with parents. In contrast, parents' perceptions of their relationships with teachers were

Table 3. Associations between parent-teacher affective relationships and child social skills.

	Est.	SE	<i>p</i>
Fixed effects			
Concurrent associations			
Parent-reported affective relationship	0.04	0.03	.268
Teacher-reported affective relationship	0.15	0.03	<.001
Lagged associations			
Parent-reported affective relationship	-0.01	0.04	.769
Teacher-reported affective relationship	0.05	0.04	.197
Sustained associations			
Parent-reported affective relationship	0.06	0.06	.261
Teacher-reported affective relationship	0.34	0.06	<.001
Intercept			
Linear effect of time	-0.26	0.17	.125
Geographic location (urban = ref)	0.00	0.13	.975
Low income (not low = ref)	0.10	0.15	.506
Home language (English = ref)	0.31	0.17	.069
Child age	0.24	0.18	.178
Child gender (male = ref)	0.30	0.10	.005
Parent education (Bachelor's+ = ref)			
<High School diploma/GED	-0.21	0.23	.368
High School diploma/GED	-0.39	0.17	.027
Some college but <2-year degree	-0.38	0.16	.018
Associate's or 2-year degree	-0.20	0.21	.339
Child race/ethnicity (White, non-Hispanic = ref)			
Black, non-Hispanic	0.22	0.18	.234
Hispanic	-0.07	0.17	.694
Other, non-Hispanic	-0.05	0.18	.781
Variance components			
Random preschool teacher intercept	0.06		
Random K teacher intercept	0.03		
Child intercept	0.42		
Child slope	0.01		
Residual	0.32		

ref = reference group.

Table 4. Associations between parent–teacher affective relationships and child problem behaviors.

	Est.	SE	<i>p</i>
Fixed effects			
Concurrent associations			
Parent-reported affective relationship	−0.03	0.03	.269
Teacher-reported affective relationship	−0.11	0.03	<.001
Lagged associations			
Parent-reported affective relationship	0.09	0.04	.034
Teacher-reported affective relationship	−0.07	0.04	.104
Sustained associations			
Parent-reported affective relationship	−0.22	0.05	<.001
Teacher-reported affective relationship	−0.32	0.06	<.001
Teacher-reported affective relationship x time	−0.08	0.04	.023
Intercept	−0.34	0.89	.706
Linear effect of time	−0.06	0.16	.711
Geographic location (urban = ref)	−0.08	0.13	.507
Low income (not low = ref)	−0.04	0.13	.784
Home language (English = ref)	−0.42	0.16	.008
Child age	0.09	0.17	.593
Child gender (male = ref)	−0.20	0.10	.039
Parent education (Bachelor's+ = ref)			
<High School diploma/GED	−0.01	0.22	.981
High School diploma/GED	0.17	0.16	.282
Some college but <2-year degree	0.19	0.15	.208
Associate's or 2-year degree	0.14	0.19	.461
Child race/ethnicity (White, non-Hispanic = ref)			
Black, non-Hispanic	−0.20	0.17	.228
Hispanic	0.11	0.16	.496
Other, non-Hispanic	−0.15	0.17	.387
Variance components			
Random preschool school intercept	0.04		
Random preschool teacher intercept	0.08		
Random K teacher intercept	0.06		
Random 1 st grade teacher intercept	0.07		
Child intercept	0.35		
Child slope	0.01		
Residual	0.23		

ref = reference group.

not uniquely and concurrently associated with children's social skills ($\hat{\beta} = .04, p = .268$, Table 3) or problem behaviors ($\hat{\beta} = -.03, p = .269$, Table 4).

Teachers' perceptions of their conflict with children were concurrently and negatively associated with children's social skills ($\hat{\beta} = -.17, p < .001$, Table 5) and positively associated with children's problem behaviors ($\hat{\beta} = .30, p < .001$, Table 6). Teachers' perceptions of their closeness with children were concurrently and positively associated with children's social skills ($\hat{\beta} = .17, p < .001$, Table 5) but not associated with children's problem behaviors ($\hat{\beta} = -.03, p = .307$, Table 6). These results indicate that children were reported to demonstrate greater social skills and fewer problem behaviors during years that their teachers reported more positive relationships with them.

Do Parent–Teacher and Student–Teacher Relationships in Preschool and Kindergarten Predict Children's Social Skills and Problem Behaviors the following Academic Year?

The second research question addressed associations between parent–teacher and student–teacher relationships in one year, and children's social skills and problem behaviors the following year. Controlling for concurrent associations and the other variables in the model, parents' positive perceptions of their relationships with teachers in preschool and kindergarten were positively associated with children's problem behaviors the following year ($\hat{\beta} = .09, p = .034$, Table 4). This

Table 5. Associations between the student-teacher relationship and child social skills.

	Est.	SE	<i>p</i>
Fixed effects			
Concurrent associations			
Teacher-reported conflict	-0.17	0.03	<.001
Teacher-reported closeness	0.17	0.03	<.001
Lagged associations			
Teacher-reported conflict	0.00	0.04	.988
Teacher-reported closeness	0.07	0.04	.125
Sustained associations			
Teacher-reported conflict	-0.40	0.05	<.001
Teacher-reported closeness	0.27	0.05	<.001
Intercept			
Linear effect of time	-0.27	0.14	.059
Geographic location (urban = ref)	-0.05	0.10	.621
Low income (not low = ref)	0.04	0.12	.754
Home language (English = ref)	0.27	0.14	.054
Child age	0.31	0.15	.032
Child gender (male = ref)	0.13	0.09	.139
Parent education (Bachelor's+ = ref)			
<High School diploma/GED	-0.30	0.19	.106
High School diploma/GED	-0.32	0.14	.022
Some college but <2-year degree	-0.22	0.13	.093
Associate's or 2-year degree	-0.09	0.17	.577
Child race/ethnicity (White, non-Hispanic = ref)			
Black, non-Hispanic	0.26	0.15	.076
Hispanic	0.07	0.14	.625
Other, non-Hispanic	-0.12	0.14	.408
Variance components			
Random preschool teacher intercept	0.03		
Random K teacher intercept	0.02		
Child intercept	0.26		
Child slope	0.01		
Residual	0.26		

ref = reference group.

indicates that children's problem behaviors were reported to be more pronounced when parents reported closer relationships with teachers in the prior year. The remaining lagged associations were non-significant.

Do Sustained Relationships across the Preschool through First Grade Transition Predict Children's Social Skills and Problem Behaviors Over Time?

The final research question addressed associations between sustained parent-teacher and student-teacher relationships (averaged across relationships that parents and students have with the various teachers they experience from preschool through first grade) and children's social skills and problem behaviors. Controlling for the other variables and associations in the model, sustained positive teacher perceptions of their relationships with parents were positively associated with children's social skills averaged across the preschool through first-grade transition ($\hat{\beta} = .34, p < .001$, Table 3). That is, children were reported to demonstrate greater social skills in preschool through first grade when their preschool through first-grade teachers reported greater affective relationships on average with parents. Continuity in teachers' perceptions across grade levels was also negatively associated with children's average problem behaviors, such that children had fewer reported problem behaviors in preschool through first grade when their grade level teachers reported greater affective relationships on average with parents. Interestingly, this association was significantly more negative in each subsequent year (interaction with time: $\hat{\beta} = -.08, p = .023$, Table 4), as indicated by the significant interaction between teacher-reported affective relationships with parents and time. Sustained positive parent perceptions of their

Table 6. Associations between the student–teacher relationship and child problem behaviors.

	Est.	SE	<i>p</i>
Fixed effects			
Concurrent associations			
Teacher-reported conflict	0.30	0.03	<.001
Teacher-reported closeness	−0.03	0.03	.307
Lagged associations			
Teacher-reported conflict	0.03	0.04	.357
Teacher-reported closeness	−0.06	0.04	.164
Sustained associations			
Teacher-reported conflict	0.56	0.05	<.001
Teacher-reported closeness	−0.02	0.05	.683
Intercept	−0.17	0.78	.828
Linear effect of time	−0.04	0.14	.779
Geographic location (urban = ref)	−0.02	0.11	.844
Low income (not low = ref)	0.06	0.12	.594
Home language (English = ref)	−0.33	0.14	.019
Child age	0.03	0.15	.822
Child gender (male = ref)	−0.14	0.09	.107
Parent education (Bachelor's+ = ref)			
<High School diploma/GED	0.31	0.19	.103
High School diploma/GED	0.30	0.14	.035
Some college but <2-year degree	0.10	0.13	.436
Associate's or 2-year degree	0.05	0.17	.783
Child race/ethnicity (White, non-Hispanic = ref)			
Black, non-Hispanic	−0.28	0.15	.066
Hispanic	0.04	0.14	.788
Other, non-Hispanic	0.03	0.15	.854
Variance components			
Random preschool school intercept	0.02		
Random preschool teacher intercept	0.00		
Random K teacher intercept	0.08		
Random 1 st grade teacher intercept	0.07		
Child intercept	0.29		
Child slope	0.03		
Residual	0.15		

ref = reference group.

relationship with teachers were negatively associated with children's average problem behaviors ($\hat{\beta} = -.22, p < .001$, Table 4), but not associated with children's average social skills ($\hat{\beta} = .06, p = .261$, Table 3).

Cross-grade continuity in teachers' perceptions of conflict with children was significantly negatively associated with children's average social skills ($\hat{\beta} = -.40, p < .001$, Table 5) and positively associated with children's average problem behaviors ($\hat{\beta} = .56, p < .001$, Table 6) across the preschool through first-grade transition. This indicates that children's social skills and problem behaviors were rated more positively when their preschool through first-grade teachers reported less conflict with children. In addition, consistency in teachers' perceptions of their closeness with children across grades was significantly positively associated with children's average social skills ($\hat{\beta} = .27, p < .001$, Table 5), but not significantly associated with children's average problem behaviors ($\hat{\beta} = -.02, p = .683$, Table 6) from preschool through first grade.

Discussion

Relationships both within and between home and school settings are important to children's development and are particularly salient for low-income students. Relationships characterized by closeness or conflict with teachers within the context of classrooms, as well as affective relationships between parents and their children's teachers, contribute to children's social-behavioral functioning (Denham et al., 2012; Elicker et al., 2013; Santiago et al., 2016). Promoting children's social-behavioral

functioning must begin early given that skill gaps between children growing up in low-income households and same age non-disadvantaged peers widen from preschool into elementary school and beyond (Gillanders et al., 2014), and problem behaviors in early childhood result in lasting academic and social problems (Gilliam, 2016; Wood et al., 2002). Understanding how children's immediate and cumulative relational experiences relate to their social-behavioral outcomes is essential for promoting long-term success.

This study advances our understanding of children's relational experiences in several ways. Whereas much is known about how relationships affect children in the immediate sense, less attention has been afforded to the cumulative effect of relationships, or investigations of the interplay of relationships and children's developmental trajectories longitudinally. First, this study sought to identify not only the concurrent relationship between student-teacher and parent-teacher relationships on children's social-behavioral functioning within each academic year, but also the degree to which relationships predict children's performance one year out, and the cumulative association of perceived relationships on children's social-behavioral functioning across the preschool to first-grade transition. Second, previous studies have limited their exploration of relationships to either the microsystem of the classroom (i.e., student-teacher) or the mesosystem (parent-teacher), whereas this study examines the relevance of both micro- and meso-systemic influences – immediately and over time – in predicting children's functioning using both parent- and teacher-report. Finally, previous research has examined the role of relationships over time with academic outcomes (Hajovsky et al., 2017; J. Hughes & Kwok, 2007; Maldonado-Carreño & Votruba-Drzal, 2011); this study is concerned with how student-teacher and parent-teacher relationships are connected to the social-behavioral performance of children from preschool to first grade, from the joint perspective of parents and teachers.

Consistent with previous research (Acar et al., 2018; Cadima et al., 2015; Denham et al., 2012; Marengo et al., 2018), this study found that relationships teachers report with children relate to children's social-behavioral functioning immediately and over time. Given the current sample of low-income students, these relationships are particularly important at promoting positive outcomes (Lee & Bierman, 2015). Consistent with past research (Acar et al., 2018; Denham et al., 2012; Marengo et al., 2018), connections that children reportedly have with their teachers (i.e., manifested through interactions that are warm and devoid of conflict) were related to both positive social skills and reduced problem behaviors. Specifically, children whose teachers reported having higher levels of closeness were reported to display greater levels of social skills than children for whom such close relationships were not experienced. Children whose teachers rated their relationship as high in conflict, on the other hand, were identified as having more problem behaviors and fewer social skills within a school year. Additionally, positive relationships with teachers that were sustained from preschool through first grade were found to be predictive of sustained social-behavioral benefits. Specifically, when children were consistently reported as experiencing close relationships with their grade level teachers from preschool to first grade, they were also reported as having higher social skills over time. However, when teachers across grade levels reported conflictual relationships with children over time, their social skills were rated as lower and their problem behaviors higher, on average.

In a similar way, relationships between salient adults (i.e., parents and teachers) were also related to children's proximal and distal social-behavioral outcomes. This meso-systemic relationship between adults, in which children are only indirectly involved, accounts for more than one-fourth (26%) of the variance in children's problem behaviors, and 12% of the variability in social skills. Children were reported to demonstrate more social skills and fewer problem behaviors in years when their teachers reported positive affective relationships with their parents. In the same vein, children were rated as demonstrating more positive social skills and fewer problem behaviors over time when different teachers across multiple academic years reported positive connections with their parents. The association between teacher-reported affective relationships with parents and children's reported problem behaviors became more magnified with each subsequent year, pointing to the significance of sustained and cumulative parent-teacher relationships on reports of children's behavioral functioning. In sum,

positive relationships with parents, as reported by teachers, are important for supporting ratings of children's positive social-behavioral functioning in the immediate sense. Furthermore, maintaining positive relationships among salient adults in children's lives (parents and grade level teachers) is associated with longer-term social and behavioral skills.

Relative to teachers, fewer significant associations were found between parents' reports of their affective relationships with teachers and their children's outcomes. For example, parents' reports of their relationships with their children's teachers were not associated with children's skills during the same school year. Parents' overall ratings of affective relationships with teachers were high and showed less variability than reports provided by teachers. This is consistent with other research findings that in general, parents tend to rate their current relationships with their children's teachers more positively than do teachers (Sheridan et al., 2006). Teachers have many points of comparison when reflecting on their relationships with families given the number of children in the classroom; alternatively, families have a different, more constricted vantage point.

Interestingly, and somewhat surprisingly, parent-reported relationships with children's teachers were positively associated with problem behaviors the following year. This finding was counter to the expectation that positive parent-teacher relationships would predict fewer problem behaviors in the following year. Some research has suggested that teachers' overtures to parents to discuss behavioral concerns enhances parent-teacher rapport (Buchanan & Clark, 2017). It is possible that parent and teacher interactions to discuss challenging behaviors at one point in time created a positive connection, yet remained insufficient to prevent the recurrence of problem behaviors – which persisted – one year later. Rather, supporting sustained, positive relationships between parents and their children's subsequent teachers across the early school years (from pre-K through first grade) appears to be one potential avenue to modify problem behaviors before they escalate in the later elementary years. Specifically, overall parent ratings of affective relationships with teachers from preschool to first grade predicted lower problem behaviors on average over time, mirroring teachers' ratings and corroborating the importance of sustained relationships between parents and their children's various teachers for positive behavioral outcomes. Indeed, it is possible that consistent and positive parent-teacher relationships serve to change negative trajectories for children with challenging behaviors.

To understand how relationships can serve as malleable factors, research uncovering how such relationships are manifest in natural interactions between teachers and children, and between teachers and parents, is necessary. That is, further specification of actions that are characteristic of warm, nonconflictual student-teacher relationships, and that bring parents and teachers together in affectively reinforcing ways, is necessary to further operationalize efficacious practices. It is possible that student-teacher relationships influence social-behavioral outcomes through improved strategies that support social-emotional learning in the classroom. Relationships between parents and teachers might also encourage positive parenting practices at home, resulting in adaptive social and behavioral outcomes. Teachers and parents might be more likely to implement coordinated and aligned supports for children when their relationships are strong. Beyond general actions, it is likely that relationships are experienced by children in nuanced ways such that their uptake is personal and idiosyncratic. Because a "one size fits all" approach is not possible when it pertains to student-teacher and teacher-parent relationships, understanding how child, teacher, family, and context variables interact is necessary before suggesting practices that influence relationships, and that predict social-behavioral benefits.

There are other ways that relationships could operate to predict improvements in social-behavioral challenges. It is possible that student-teacher relationships or parent-teacher relationships are mechanisms to buffer negative classroom experiences for children with social or behavioral difficulties. It is also possible that enhancing teachers' and parents' views of one another (e.g., building trust and reliance) may create continuities across home and school, making it easier to support children as they learn and engage in new skills. Through positive interactions, teachers might learn from and gain skills from families about optimal support for children, and families could discover new strategies to try at home to promote optimal outcomes for children. Through strong relationships, parents and teachers

have an opportunity to align their goals and approaches and establish continuity across settings in support of children's learning, thereby benefiting children's skill development. Studies exploring the possible mediating role of relationships are necessary to discern whether this malleable factor functions in this way to support children's skill development and close social-behavioral gaps. Studies are also needed to explore the effects of these relationships beyond the primary years and explore the compounding effect of student-teacher and parent-teacher relationships through the elementary school period and beyond. That is, we need to understand how children might benefit when micro- and mesosystem relationships are consistent and coherent (e.g., strong student-teacher and strong parent-teacher relationship) throughout development.

Study Limitations

Findings from this study should be interpreted in light of various limitations. First, although the current findings corroborated some research demonstrating the importance of relationships in classrooms and between home and school systems on reports of children's functioning, it is not possible to determine whether such relationships are responsible for the development of positive social and behavioral skill sets. The current study suggests that an accumulation of positive student-teacher and parent-teacher relationships may serve children's development well; however, the direction of influence is unknown. Whether these relationships predict children's behaviors, or alternatively, if children's behaviors impact immediate and future relationships, is unclear. Indeed, future research is warranted to tease out with greater precision the directionality of the associations both concurrently and over time.

Second, the measures used in this study were informant reports and thus subjective accounts based on parent and teacher perspectives rather than observations of our variables of interest. This includes parent and teacher reports of children's social skills and problem behaviors, as well as the parent-teacher and student-teacher relationship. The cost of reliably capturing individual students' social and behavioral performance is prohibitive, and is generally limited to one snapshot in time. Reports from parents and teachers are intended to reflect their observations of students' social and behavioral skills over a longer period of time (e.g., several weeks), but are nevertheless subject to bias. Given the interest in understanding students' performance across home and school settings, and to minimize the source bias that is possible given that parents and teachers rated both the predictor (relationship) and outcome (student skills) variables, composite (parent-teacher) social skill and problem behavior scores were derived and used in the current analyses. Whereas composite scores may be less sensitive to nuanced perspectives, they retain an ability to capture cross-setting performance and minimize source bias.

Third, the construct of sustained relationships is complex and perhaps not adequately addressed in the present study. Specifically, unique from the constancy with which children experience relationships with parents over time, lack of continuity in the teacher role results in disconnected relationships between students and teachers, and between parents and their children's teachers from year to year. Given that teacher participants change, measuring the longitudinal effects of relationships within the school context is difficult. We conceptualize our study as exploring the effects of cumulative effects of relationships with individuals serving in the teacher role within given grade levels, which allows us to capture this construct over time. However, it is important to note that capturing nuances concerning the depth and history of personal relationships between teachers and their students and parents is not possible.

Relatedly, the parent-teacher relationship measure tapped each individual's perspective of their relationship with the other person, but not the dyadic nature of interactions between parents and teachers. Understanding a parent's or teacher's experiences or perceptions of the other is important, and self-report is the best method of assessing personal perspectives. However, unidimensional (parent or teacher) report does not capture the quality or effects of dyadic relations among the participants, or objective actions reflective of relationship quality. More refined measures of parent-teacher interactions may glean potentially important information and should be pursued in future studies.

Also related to measurement, a rather restricted range was experienced in the measurement of both predictors (e.g., student–teacher relationship) and outcomes (e.g., social skills) in the current sample, with ratings generally positive. These restrictions may have limited the ability to detect statistically significant associations among variables and warrant further investigation with samples representing broader ranges of both malleable factors (parent–teacher and student–teacher relationships) and student outcomes (social skills and problem behaviors).

Further, the study’s sample was limited in geographic and racial diversity. The setting for this study was constricted to one state in the Midwest and thus limited in geographic representation, confining the generalizability of the sample to one region, and its students, teachers, and families. Furthermore, the sample in this region was predominantly White and 78% of children were living in low-income conditions, as such, generalizations should be limited to similar populations. Research is needed to understand how these findings might play out across cultural and linguistic groups. Replications of these associations with broader samples, over longer periods of development, and across domains are necessary.

Implications for Practice and Policy

The findings suggest that early education policies and practices that create opportunities for teachers to establish relationships with their students and their students’ families within and across academic years may promote children’s long-term social-behavioral success. Strategies that help teachers strengthen relationships with parents appear to hold promise for promoting social-behavioral skills in the early years of schooling. Intentional in-service and pre-service professional learning experiences in building and maintaining positive affective relationships with families as well as in methods for nurturing warm, supportive relationships with students is warranted. Organizations might offer dedicated time that allows teachers to plan for and practice relationship-based strategies with parents and students. Furthermore, educational systems must attend to and monitor the relational experiences of students and families over time to yield optimal developmental outcomes. The present research, suggesting that associations between sustained positive relationships and social-behavioral skill development for children across the preschool to first-grade continuum, adds credence to the roles of student–teacher and parent–teacher relationships as malleable practice and policy factors worthy of investment.

Conclusions

This study sheds light on the importance of sustained relationships for children, both within the microsystem of classrooms, and across the home-school mesosystem. This is the first known study to explore both of these systems over time in the context of developmental trajectories (i.e., a child’s chronosystem). Attention to how relationships between parents and teachers, and teacher and students change in the course of development has been suggested previously (e.g., Hill, 2015). Given their potential malleable role for promoting social skills and reducing problem behaviors, it is important to understand teacher–parent and student–teacher relationships from a developmental lens, with a focus on understanding interactions over time.

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Appendix

The baseline cross-classified multilevel model was specified according to Equation 1.

$$\begin{aligned}
 Y_{tkcs} = & \gamma_{0000} + \gamma_{1000}MF1_{tk} + \gamma_{2000}MF1_{(t-1)k} \times LAG_t + \gamma_{3000}MF2_{tkc} + \gamma_{4000}MF2_{(t-1)kc} \\
 & \times LAG_t + \gamma_{5000}Time_t + \gamma_{0100}\overline{MF1}_{\bullet k} + \gamma_{5100}Time_t \times \overline{MF1}_{\bullet k} + \gamma_{0200}\overline{MF2}_{\bullet k} \\
 & + \gamma_{5200}Time_t \times \overline{MF2}_{\bullet k} + \sum_p \gamma_{0p00}COV_{pk} + e_{tkcs} + u_{0kcs} + u_{1kcs}Time_t \\
 & + v_{00cs}^0(INT0_t) + v_{00cs}^1(INT1_t) + v_{00cs}^2(INT2_t) + w_{000s}^0(INT0_t) + w_{000s}^{12}(INT12_t)
 \end{aligned} \tag{1}$$

Notation is as follows: Y_{tkcs} is the social skills or problem behaviors composite score (depending on the model), averaged across parent and teacher reports, at the t^{th} time point for the k^{th} child in the c^{th} classroom and s^{th} school; $MF1_{tk}$ and $MF2_{tk}$ are the malleable factors (parent- and teacher-reported parent-teacher affective relationship, respectively, or teacher-reported student-teacher conflict and closeness, respectively, depending on the model) group-mean centered and measured concurrently with outcomes; $MF1_{(t-1)k}$ and $MF2_{(t-1)k}$ are the malleable factors measured at the previous time point; $\overline{MF1}_{\bullet k}$ and $\overline{MF2}_{\bullet k}$ are the malleable factors averaged across time; LAG_t is a dummy variable indicating whether the lagged association is estimated (0 = preschool time point, 1 = kindergarten or first-grade time point); $Time_t$ is the time point (0 = preschool, 1 = kindergarten, 2 = 1st grade); COV_{pk} is the p^{th} covariate: geographic location (0 = urban, 1 = rural), low income status (0 = no, 1 = yes), non-English home language (0 = no, 1 = yes), child age in years at time t , child gender (0 = male, 1 = female), primary caregiver highest education level (five categories with Bachelor's degree or higher as the reference), and child race/ethnicity (four categories with White, non-Hispanic as the reference); the γ 's are fixed associations relating the predictors to the outcome; e_{tkcs} is the random residual; u_{0kcs} and u_{1kcs} are random child intercept and slope effects; $v_{00cs}^0 - v_{00cs}^2$ are acute random classroom intercepts that only contribute at the concurrent time point; and $w_{000s}^0 - w_{000s}^{12}$ are acute random school intercepts that only contribute at the concurrent time point (only two effects because most children remained in the same school between kindergarten and 1st grade). All random effects were assumed to be independent and normally distributed. Random effects were dropped from the model if there was insufficient variability, as were non-significant time by malleable factor interaction terms (γ_{5100} and γ_{5200}).