The Role of Authoritative Parenting in the Early Academic Achievement of Latino Students

According to the life course perspective of high school dropout (Alexander, Entwisle, & Kabbani, 2001), the successful completion of high school is determined by the interplay of individual child, family and school factors that unfold well before students enter high school. In support of this model, a host of indicators in first grade, including behavior problems, school performance, grade retention, parent involvement, and family stressors have been shown to predict dropout (e.g., Brooks-Gunn, Guo, & Furstenberg, 1993; Cairns & Cairns, 1994; Ensminger & Slusarcick, 1992; Garnier, Stein, & Jacobs, 1997; Haveman & Wolfe, 1994; Roderick, 1994). In fact, even before they enter formal schooling, children have had a wealth of experiences that set the stage for the ways in which they will transition to and navigate through school (Finn, Gerber, & Boyd-Zaharias, 2005; Garnier et al., 1997). In a prospective, longitudinal study of children from 6 months through 19 years, Egeland and colleagues (Jimerson, Egeland, & Sroufe, 2000) examined characteristics prior to school entry and throughout children’s schooling as predictors of high school dropout. In their sample of non-Latino white and black families living in poverty, the home environment and quality of early parenting uniquely predicted dropout status, even when accounting for predictors measured at later timepoints. Despite the policy and practice implications of these findings, it is not known whether such findings apply to Latino student populations, a gap that is particularly notable in light of the disproportionate risk for school dropout experienced by Latinos (Aud, Fox, & KewalRamani, 2010). To address this limitation in the literature, the present study examined parenting as a predictor of early academic achievement in a sample of Latino students and their mothers.
Latino Parenting

Authoritative and Authoritarian Parenting Practices. A vast literature shows the strong and direct effects that parenting has on child development. Traditional parenting theory emphasizes responsiveness (i.e., warmth and nurturance) and demandingness (i.e., behavior management practices) as key dimensions underlying parenting styles. These global dimensions of parenting appear to be cross-culturally robust in that parents from all cultures place demands on and respond to the needs of their children, but some research suggests that different levels of demandingness and responsiveness may be seen across ethnic groups (e.g., Cardona, Nicholson, & Fox, 2000). More importantly, relations between parenting and child outcomes appear to be moderated by ethnicity (Hill, Bush, & Roosa, 2003; Steinberg, Lamborn, Dornbusch, & Darling, 1992).

For non-Latino white children, authoritative parenting practices (i.e., high responsiveness and demandingness) seem to promote, and authoritarian practices (i.e., low responsiveness and high demandingness) to hinder the developmental competencies needed to achieve academically. Among Latinos, the literature is inconclusive regarding the nature and influence of parenting practices. Some studies suggest that Latino parents are highly authoritarian, and that their children may not be impacted negatively by this parenting approach (Hillstrom, 2009; Moon, Kang, & An, 2009; Pong, Hao, & Gardner, 2005), whereas others find negative effects of authoritarian parenting on Latino children (Calzada, Barajas-Gonzalez, Huang, & Brotman, 2015; Calzada, Huang, Anicama, Fernandez, & Brotman, 2012). These inconsistencies may reflect the differential impact of parenting practices across developmental stages; during early childhood, it may be expected that authoritarian parenting is especially maladaptive. For example, it seems likely that high levels of parental control may confer risk when children
transition to formal schooling if controlling parenting inhibits the autonomy children need to be successful in adapting to a classroom setting. At the same time, although high levels of authoritarian control may be protective among adolescents who are vulnerable to negative peer and neighborhood influences, high control may not be necessary with preschoolers who have limited exposure to such risk factors.

Latinos Cultural Socialization. Like all family processes, parenting is rooted in culture (i.e., the shared values, beliefs and experiences that determine a group’s behavioral norms; Guarnaccia & Rodriguez, 1996). In the present study, we consider a cultural framework (Calzada et al., 2010) that expands the focus of parenting research to emphasize cultural socialization as the impetus for the intentional use of authoritarian or authoritative parenting practices. Cultural socialization is the process through which parents transmit cultural values, beliefs, traditions, and behavioral norms to their children (Hughes et al., 2006). For Latino parents, adherence to the cultural value of respeto, which emphasizes obedience and deference to adults (Calzada, 2010; Calzada, Fernandez, & Cortes, 2010), appears to go hand-in-hand with an authoritarian parenting style. Depending in part on their acculturative status (i.e., acculturation, or adaptation to mainstream culture; and enculturation, or maintenance of one’s culture of origin), Latino parents may emphasize respeto to varying degrees (Gonzales et al., 2008). More acculturated Latina mothers may be more likely to embrace the mainstream US cultural value of independence, socializing their child to be assertive and autonomous, even during early childhood. The value of independence appears to go hand-in-hand with authoritative parenting practices. Thus, according to this framework (Figure 1), mothers’ acculturative status is expected to influence socialization messages of respeto or independence and the authoritarian or authoritative parenting practices that reinforce them which in turn, are expected to influence child developmental outcomes.
No studies have examined the relation of cultural socialization to children’s early academic functioning but theoretically, *respeto* may make children more “teachable” in the classroom in that they respect authority and conform to rules (Harwood, 1992). Alternately, it may leave children ill-prepared for schooling in the U.S. educational system because they have been less encouraged to question, problem-solve or negotiate. In a correlational study of Latino preschoolers, Calzada and colleagues (2012) found *respeto* to be negatively associated with academic school readiness among Dominican-origin (DA) Latino students, and independence to be positively associated with academic school readiness among Mexican-origin (MA) students. Unexpectedly, *respeto* was also positively associated with social-emotional problems for both MA and DA children, mediated by authoritarian parenting practices, a finding that was later replicated using longitudinal data (Calzada et al., 2015). Beyond suggesting the validity of a cultural framework of Latino parenting, these studies demonstrate the role of socialization messages and parenting practices in the developmental competencies that Latino children need to be successful in school.

**The Role of School Readiness**

School readiness, or the extent to which children enter school with the foundational academic and social-emotional competencies that allows them to learn, predicts later achievement (Duncan et al., 2007). The academic domain of school readiness includes early language, understanding of concepts, and motor skills that serve as building blocks for emergent reading and math skills (NICHD Early Child Care Research Network, 2000). The social-emotional learning (SEL) domain includes developmental skills—such as interacting positively with others and regulating emotions, attention and behavior—that promote on-task behavior and executive functioning (Rhoades, Warren, Domitrovich, & Greenberg, 2011). Children without the requisite SEL skills
and who display behavior problems are less likely to engage in appropriate learning activities or exhibit a desire to learn and succeed (Wentzel, 1993), and their teachers are less likely to provide them with instruction and positive feedback (McEvoy & Welker, 2000). Over time, as children act out when presented with difficult tasks, their teachers tend to withdraw demands and provide fewer learning opportunities (Arnold et al., 1999; Carr, Taylor, & Robinson, 1991). In one of the few longitudinal studies of young Latino children’s academic development, children with problem behavior in preschool had lower academic achievement in first grade (Oades-Sese, Esquivel, Kaliski, & Maniatis, 2011).

Overall, though, Latino students appear to be at relatively low risk for early behavior problems, in part because of a strong cultural emphasis on cultivating interpersonal (e.g., social) skills beginning at a very young age (Galindo & Fuller, 2010; Guerrero et al., 2012). In contrast, in the earliest years of schooling, Latinos lag behind their non-Latino peers across various indicators of academic school readiness. Latino pre-k students have lower levels of letter, number and shape recognition (Aud et al., 2010), and Latino kindergarten students are rated as less engaged and attentive (Llagas, 2003). Latino students score significantly below the national average on standardized achievement tests (Fryer & Levitt, 2004; Lee & Burkam, 2002). By fourth grade, 78% of Latino students fall below the proficient range on national standards of math and reading, and these rates remain stable through grade 12, when 80% of Latinos have not reached proficiency in math and reading (Hemphill, Vanneman, & Rahman, 2011). These achievement gaps, which have remained relatively intractable over time (Hemphill et al., 2011), have dire implications for high school graduation rates (Alexander et al., 2001).
The Present Study

In response to the compelling need to identify malleable predictors that may be targeted in interventions to support the academic success and high school completion of Latino students, the present study uses a longitudinal design to examine early academic achievement and its relation to parenting practices, conceptualized as cultural socialization messages and the authoritative/authoritarian practices that reinforce them, that are shaped by mothers’ acculturative status. First, we describe academic achievement at the end of first grade in a sample of MA and DA students in New York City. Second, we test a cultural framework of Latino parenting to identify predictors of student academic achievement at the end of first grade. In all analyses, we consider the role of ethnicity, gender and grade.

Ethnicity. Considerable diversity characterizes the Latino population, which is made up of approximately 52 million immigrant and later-generation families from more than a dozen Spanish-speaking countries of origin. To provide a nuanced understanding of the pan-Latino population, the present study sampled purposively and exclusively from the Mexican (MA)- and Dominican (DA)- origin populations. The majority of U.S. Latinos (65%) come from Mexico, and though they have not historically resided in the Northeast, MAs are poised to quickly become the largest subgroup in New York City (NYC; Bergad, 2011). In contrast, the Dominican population has long represented one of the largest subgroups in NYC, where 1 in 5 Latinos is DA. The two groups differ significantly across various contextual characteristics, and citywide statistics show lower academic achievement in MA relative to DA students (Sáenz & Ponjuan, 2011).

Gender. Second, we examine gender differences, given the well-established disparities in achievement that favor girls nationally and within ethnic groups (NCES, 2000). Compared to
girls, boys are more likely to repeat a grade, be suspended or expelled, be referred for special education, and be diagnosed with behavior problems that interfere with learning. The cumulative toll of these obstacles contributes to lower rates of high school graduation and post-secondary education among Latino males than females (Sáenz & Ponjuan, 2011). For example, only 57% of Latino boys who attend NYC public schools graduate from high school, compared with 67% of Latina girls (Villavicencio, Bhattacharya, & Guidry, 2013).

Grade. Finally, we examine differences between students who entered their assigned elementary school in pre-kindergarten versus kindergarten. The benefits of pre-k have been described extensively in the literature (Gormley, Gayer, Phillips, & Dawson, 2005), but only about half of Latino children attend pre-k (Espinosa, 2008). Estimates are even lower for children from Spanish-speaking Latino families (Espinosa, 2008), making the grade in which students start formal schooling especially pertinent in immigrant samples.

Based on these literatures, we explored mean-level differences based on ethnicity, gender and grade in our first aim of describing academic achievement at the end of first grade. We expected DA students, girls, and children who entered school as pre-k students to be higher achieving than MA students, boys, and children who entered school as kindergarten students. For Aim 2 (model testing), we tested a 5-step sequential model which considers ethnicity as a predictor of children’s academic achievement, through it association with maternal acculturative status, cultural socialization messages, parenting practices, and student school readiness. We considered child gender and grade at baseline as covariates in the model given their expected associations with school readiness and achievement.
Method

Participants

Data was drawn from a longitudinal study of the early development of Latino children conducted by the authors in NYC. The study took place in 24 public elementary schools, where eligible 4 – 5 year-old children were enrolled between 2010 - 2013. Children were eligible if their mothers identified as Mexican (MA) or Dominican (DA) and if they were newly enrolled in pre-kindergarten or kindergarten in one of our partner schools. The final sample included 414 MA and 336 DA students and their mothers (N=750 mother-child pairs).

Given the current study aims, we limited the sample to children who participated in academic achievement testing at the end of first grade (n = 530, 71%). We also excluded three individual cases with missing data for more than 50% of the variables, as per Hair, Black, Babin, and Anderson. (2010). The final analytic sample included 527 cases (70.26% of the eligible sample). Chi-squared analyses indicated that there were no differences on demographic characteristics (e.g. ethnicity, child gender, maternal education), acculturative status, parenting practices, or levels of school readiness between families who did and did not remain when their child was in the first grade. However, mothers who were not assessed at follow-up were more likely to socialize their children to independence (p < .01).

Consistent with previous reports on these two subsamples, MA (n=303) and DA (n=224) families differed on several demographic characteristics (see Table 1). Specifically, MA mothers were more likely to be immigrant (p<.001), have less than a high school education (p<.001), and live in poverty (p<.001) in comparison to DA mothers. There were no significant differences between the MA and DA samples on child age or gender.
Measures

Demographic Form. A demographic form that assessed ethnicity, immigrant status, and socioeconomic status was administered. Ethnicity was based on mothers’ self-identified ethnic group and was coded as Mexican American (= 0) or Dominican American (= 1). To calculate poverty, we considered income relative to number of family members living in the home for whom the mother was financially responsible or with whom she was sharing household expenses. Using the federal poverty guidelines, we categorized families as poor, defined as living below the poverty threshold.

Acculturative Status. The Abbreviated Multidimensional Acculturation Scale (AMAS; Zea, Asner-Self, Birman, & Buki, 2003) was used as a self-report measure of acculturative status (i.e., acculturation, enculturation). The AMAS can be used with any ethnic group; the use of the term status recognizes that acculturation/enculturation change over time and that the current measure reflects mothers’ acculturation/enculturation at a specific point in time. This study used two domains of the AMAS: identity and cultural knowledge, both of which are measured for the culture of origin (enculturation) as well as mainstream/"U.S. American" culture (acculturation), resulting in four subscales (2 of enculturation and 2 of acculturation). The 24 items are rated from “not at all” (1) to “extremely well” (4). Sample items include “Being U.S. American/Dominican/Mexican plays an important part in my life,” (identity); “How well do you know the national heroes of U.S./Mexico/the Dominican Republic?” (cultural knowledge). Internal consistencies were high for all subscales for both groups (MA: α range .89-.91; DA: α range .91-.92).

Cultural Socialization Messages. To assess socialization messages, mothers completed the Cultural Socialization of Latino Children (CSLC; Calzada et al., 2012), a measure that taps into
the behavioral manifestations of the cultural value of *respeto* and the U.S. American value of independence (Calzada et al., 2010). Two factor-derived scales were used in the present study: the *respeto* scale included 5 items (e.g., “I tell my child to show respect by greeting elders politely.”), and the independence scale included 6 items (e.g., “I teach my child to share his own ideas and opinions.”). Items are rated on a likert scale from “strongly disagree” to “strongly agree.” Internal consistency was adequate for both scales and was similar for the MA and DA samples (α were .72 and .71 for MA, and .78 and .77 for DA, for *respeto* and independence, respectively).

**Parenting Practices.** The Parenting Styles and Dimensions (PSD; Robinson, Mandleco, Olsen, & Hart, 1995) was administered as a self-report measure of parenting practices corresponding to Baumrind’s (1995) authoritarian and authoritative parenting style constructs. Parents respond to each item on a 5-point likert scale anchored by “never” and “always.” The PSD has been shown to have strong face validity, concurrent validity, and predictive validity for school children, including preschool students, in the U.S. (Olivari, Tagliabue, & Confalonieri, 2013). The PSD has been standardized for parents of young children, and has been used with samples of various ethnic backgrounds including Latina mothers from Puerto Rico, the Dominican Republic and Mexico (Calzada & Eyberg, 2002; Calzada et al., 2012; Calzada et al., 2015). In the present study, a factor analysis was consistent with two factors corresponding to an authoritative parenting scale (11 items; e.g., “I explain to my child how I feel about his or her good and bad behavior”) and an authoritarian parenting scale (5 items; e.g., “I spank when my child is disobedient”). Alpha coefficients were acceptable for authoritative (MA: .84 and DA: .83) and authoritarian (MA: .67 and DA: .61) practices for both groups.
School Readiness

Academic school readiness. The Developmental Indicators for the Assessment of Learning-Third edition (DIAL-3; Mardell-Czudnowski & Goldenber, 1998) is an individually-administered test that was administered as a measure of academic school readiness. The DIAL-3, and its abbreviated version, the Speed DIAL (used in the present study), assess motor, conceptual and language development that is considered the foundation for successful academic learning. Sample items include copying (motor), identifying colors (concepts), and letter naming (language). The DIAL has well-established psychometric properties, includes indicators of potential developmental delays and is available in Spanish and English. The Speed DIAL, which was used in the present study, is predictive of math and English test scores in 3rd grade (Walk, 2005). On the Speed DIAL, the means in the standardization sample were: 20.0 (6.6) for children ages 4-0 through 4-5; 23.8 (6.0) for children ages 4-6 through 5-0; 27.2 (6.9) for children ages 5-0 through 5-5; and 30.9 (6.0) for children ages 5-6 through 6.

SEL School Readiness. The Behavior Assessment System for Children-2 (BASC-2; Reynolds & Kamphaus, 2004), a measure of social-emotional and behavioral functioning with well-established psychometric properties, was administered to teachers. Teachers rate 139 items in terms of how often the child has engaged in a behavior during the past 4 weeks on a 4-point scale, and T-scores are calculated based on child age ($M = 50, SD = 10$). In the present study, two latent variables were used: teacher-rated adaptive behaviors based on three measured variables (i.e., social skills, adaptability, communication) and teacher-rated total problem behaviors based on three measured variables (i.e., the depression, aggression, hyperactivity subscales of the BASC).
Child Academic Achievement. The Kaufman Test of Educational Achievement, Second Edition, Brief Form (KTEA-II; Kaufman & Kaufman, 2005) provides a quick, reliable estimation of global academic skills by assessing the achievement domains of reading, mathematics, and written language. Standardization of the KTEA included a Latino subsample. The Reading subtest includes word recognition (27 items) and reading comprehension (46 items). The Math and Writing subtests consist of 67 and 46 items, respectively. The KTEA-II Brief Form also derives a Brief Achievement Composite score. Standard scores are based on a mean of 100 and a standard deviation of 15. In the present study, children who scored >1 SD below the mean were categorized at risk. For model testing, we created a latent variable of child academic achievement using three measured variables corresponding to the reading, math, and writing subtests of the KTEA.

Procedure

Enrollment of School Partners. All data were drawn from schools that served MA and DA students in NYC. Public elementary schools were approached for partnership in the project via informational letters and phone calls if they 1) housed a universal pre-k program with at least 2 pre-k classes, and 2) had at least 20% Latino students according to Department of Education statistics. The 24 partner schools were classified as either a “Mexican” (n=13) or a “Dominican” (n=11) school depending on the predominant ethnic group of its Latino students; all MA participants were drawn exclusively from “Mexican” schools and all DA participants were drawn exclusively from “Dominican” schools. Importantly, MA and DA schools did not differ on the contextual characteristics measured in the present study (Calzada et al., 2015).

Participant Enrollment. We sampled from students entering their zoned public elementary school, whether as pre-k or kindergarten students, to characterize Latino children’s experiences
during the transition to formal schooling. Participant enrollment took place exclusively in the initial 3-month period of the school year. At partner schools, research staff, fluent in Spanish and English, attended parent meetings and were present during daily school drop-off and pick-up times to inform mothers of the study. The recruitment rate was 79% (range across schools: 59 – 98%), with no differences between MA and DA schools.

**Data Collection.** As part of a larger, longitudinal study, mothers were interviewed, teachers completed questionnaires, and children were assessed in the fall when they entered school (i.e., in pre-k or kindergarten) and in the spring as they completed first grade. In the present study, data on predictor variables (mothers’ acculturative status, parenting, student school readiness) were collected at baseline (i.e., in the Fall when children first entered school) and data on outcome variables (academic achievement) were collected at the end of first grade.

Participant mothers were scheduled for an appointment with a bilingual research assistant at their child’s school. Mothers were asked which language they preferred to be interviewed in and were consented before beginning any research activities; all forms and measures were available in both Spanish and English. The majority of mothers (98% of MA and 76% of DA) chose to be interviewed in Spanish. Interviews lasted approximately 2 hours and mothers received a stipend for their participation. All child testing occurred during the school day at a time agreeable to the teacher. For the baseline assessment, testing was conducted by a bilingual research assistant in an hour-long session (broken into shorter sessions when needed) in the child’s primary language (determined based on mother report, child report and research staff observation of child’s language use in informal interactions). All children were at least 4 years old at the time of testing. Approximately 50% of MA and DA children (both MA and DA) were tested in Spanish.
The final assessment in the Spring of first grade followed the same procedure, except that all children were tested in English, the language in which they were evaluated by schools.

After the mother and child assessments, teachers of participating children were contacted (all mothers consented to the collection of teacher report) and their consent was obtained in person. Consenting teachers (92%) completed a teacher report packet on the child (e.g., child behavior) and mother (e.g., parent involvement) for each participating child in that classroom. Most (93%) consenting teachers returned their packets, resulting in 202 teachers who provided data on 368 pre-k and kindergarten classrooms and 702 (93.6%) participant children. There were no differences on demographics (i.e., ethnicity, mother education, marital status, family poverty, child gender), or parent-rated child functioning (i.e., externalizing, internalizing problems) between children who had teacher ratings and those who did not ($p > .05$).

**Analytic Approach**

We used SPSS and AMOS software programs for analyses. For our first aim, to describe academic achievement and its predictors, we conducted descriptive and bivariate statistics on the variables for the full sample and for subgroups based on ethnicity, gender, and grade when children entered school (i.e., in pre-k or kindergarten). For our second aim, we used two time points: baseline data for predictor variables (acculturative status, socialization messages, parenting practices, school readiness) and follow-up data collected at the end of the child’s first grade school year to test a model of parenting and academic achievement. As a first step, we conducted a missing values analysis. Results showed the proportion of missing data per variable was less than 10%; that 33 cases had higher proportions of missing data (10 to 18%); and that the data were missing at random ($p \geq .05$). To account for missingness, we used a full information procedure (FIML). Instead of imputing for missing data, FIML derives likelihood functions.
based on all available data and then estimates parameters for all data points (Enders & Bandalos, 2001).

We then tested a structural equation modeling (SEM; see Figure 1) using the maximum likelihood estimation method. We chose SEM analyses over multiple regression analyses because of its ability (1) to examine sequential links from mothers’ ethnicity to acculturation and enculturation, to socialization messages, to parenting practices, to school readiness, and finally to academic achievement and (2) to correct for measurement error and residual error (Byrne, 2001). We did not use multi-level analysis because between-classrooms variance was not significant and intraclass correlations for academic achievement were minimal (<.01). To assess the goodness of fit of the hypothesized model to the actual data in SEM, four indices were used as recommended by Keith (2014) and Kline (2005): Chi square ($\chi^2 > .05$ or $\chi^2/df$ ratio less than 3.0), Root Mean Square Error of Approximation (RMSEA < .05), Comparative Fit Index (CFI > .90), and Tucker-Lewis index (TLI > .90). We first analyzed a measurement model to test the adequacy of the hypothesized factor structure for all variables. If there is sufficient evidence of fit in the measurement model, the next step is to test the conceptual path model (i.e., the structural model). In the conceptual model, ethnicity served as a predictor (through acculturative status, parenting, and child school readiness) of academic achievement, and child gender and grade served as control variables.

Results

Preliminary Analyses

Table 1 presents the baseline characteristics for the full sample and for the three subgroups based on ethnicity (57.5% MA), gender (47.2% boys), and grade (i.e., when they entered school, in pre-k or kindergarten; 60.5% kindergarten). Compared to DA parents, MA parents were
younger (31.27 versus 34.01 years) and more likely to be foreign-born (98.0% vs 84.3%), less educated (91.4% vs 50.7% high school graduates), and poor (83.0% vs 60.1%). There were no differences based on child gender. However, baseline characteristics showed that compared to those in pre-k, children in kindergarten were more likely to be foreign-born (10.2% versus 4.4%) and their mothers were more likely to have low educational levels (77.4% vs 69.2% high school graduates) and to work outside of the home (53.0% vs 36.4%).

Table 2 shows descriptive statistics for parenting variables as well as bivariate statistics with the endogenous variable (academic achievement in first grade). Mothers reported high levels of ethnic identity and ethnic cultural knowledge, and moderate levels of U.S. American identity and cultural knowledge; high levels of socialization to both respeto and independence; and high levels of authoritative and low levels of authoritarian parenting. Compared to MA mothers, DA mothers reported significantly higher levels of U.S. identity (3.01 vs 2.22), U.S. cultural knowledge (2.42 vs 1.64), ethnic cultural knowledge (2.80 vs 2.63), socialization messages of independence (4.48 vs 4.37), and authoritarian parenting (4.50 vs 4.24). There were no significant differences in socialization messages (respeto, independence) or parenting practices (authoritative, authoritarian) between mothers of boys and girls, or mothers of pre-k and kindergarten children.

There were robust ethnic group differences on school readiness (see Table 3). Specifically, DA children were rated as engaging in more problem behaviors (48.16 vs 45.99) but also in more adaptive behaviors (47.80 vs 45.95) in the classroom, and they scored higher on a test of academic readiness (23.72 vs 20.83) than MA children. In comparing boys and girls, boys showed more problem behaviors (47.79 vs 46.04) and less adaptive behaviors (45.82 versus 47.55 points) in the classroom than girls. Finally, children in kindergarten scored higher in
academic readiness than children in pre-k (age-adjusted scores of 25.75 vs 16.37). Notably, there were no significant differences in mean-level scores of first grade academic achievement by child ethnicity, gender or grade. However, at the end of first grade, children from the kindergarten cohort were more likely than those from the pre-k cohort to have scores at least one standard deviation below the mean, or at academic risk (23.0% vs 11.9%).

**Model Fit Analyses**

The fit indices of the measurement model were good ($\chi^2/df = 1.496$, RMSEA=.031, TLI=.927, CFI=.934). We also found a good model fit in the structural model, but only after we added family poverty, in addition to child gender and grade at baseline, as a control variable ($\chi^2/df = 1.608$, RMSEA=.034, TLI=.907, CFI=.914). The significant standardized factor loadings and $R^2$ are presented in Figure 2.

The findings show that ethnicity was significantly associated with mothers’ acculturation (U.S. identity, standardized coefficient = .44; and U.S. cultural knowledge, standardized coefficient = .57), and enculturation (ethnic cultural knowledge, standardized coefficient = .18; ethnic identity, standardized coefficient = -.13). U.S. and ethnic cultural knowledge were positively related to socialization of independence (standardized coefficient = .14 for U.S. knowledge and .25 for ethnic knowledge), and ethnic cultural knowledge was also positively related to *respeto* (standardized coefficient = .25). Socialization of independence was associated with more authoritative parenting practices (standardized coefficient = .57) but contrary to our hypotheses, we found no significant paths from *respeto* to authoritarian parenting practices, or from authoritarian parenting practices to school readiness. On the other hand, more authoritative parenting was associated with higher academic readiness (standardized coefficient = .10) and better teacher-rated adaptive behavior (standardized coefficient = .13). Both academic readiness
(standardized coefficient = 1.12) and adaptive behavior (standardized coefficient = .16) were prospectively and positively associated with academic achievement at the end of first grade. Problem behaviors at baseline were prospectively and negatively associated with academic achievement at the end of first grade (standardized coefficient = -.10). Overall, the model suggested that ethnicity and acculturative status were associated with socialization of independence and authoritative parenting practices, and that authoritative parenting practices were associated with school readiness at school entry, which predicted academic achievement at the end of first grade.

Discussion

The present study examined academic achievement among Latino students, focusing on variations by ethnicity, gender and grade when they entered school, and tested a model of parenting as a predictor of Latino students’ early achievement. To our knowledge, this is the first study to examine longitudinal associations between parenting and standardized achievement test scores in a sample of young (first grade) Latino students. Our findings highlight ethnic subgroup differences and the protective role of authoritative practices, which were found to promote academic achievement indirectly, via academic and social-emotional school readiness skills in students’ first year of school in pre-k or kindergarten.

Early Academic Achievement among Latino Students

In assessing academic achievement at the end of first grade, we found that the Latino students in our sample were generally achieving at grade level (i.e., mean of 96.56 on the KTEA) and this held true for MA and DA students, boys and girls, and students who started formal schooling in pre-k versus kindergarten. Past studies have found that Latino students enter pre-k and kindergarten with low levels of academic skills (Fryer & Levitt, 2004; Lee & Burkham,
2002). The achievement gap has been shown to narrow, however, between pre-k, kindergarten and first grade (Reardon & Gallindo, 2009). Similarly, in the present study, mean-level descriptive statistics show that even students with limited academic readiness skills (e.g., MA students) or low social emotional school readiness (e.g., boys) at the start of school were, as a whole, achieving at grade level by the spring of first grade.

Still, 18.5% of students were in the at-risk range (defined as 1+ SD below the mean on standardized testing) at the end of first grade, with notable group differences observed. First, children who entered formal schooling in kindergarten rather than pre-k were twice as likely to be at risk for academic underachievement at the end of first grade (23% compared with 12%). This pattern is consistent with past studies showing the importance of preschool for academic success, especially among students from non-English speaking backgrounds (Howes et al., 2008; Wong, Cook, Barnett, & Jung, 2008). Second, according to post-hoc descriptive analyses on ethnic and gender subgroups, 28% of DA boys were at risk for academic underachievement at the end of first grade, compared with approximately 15% of MA boys, MA girls and DA girls. Future research is needed to examine the academic trajectories of diverse Latino students, with attention to what, if any, risk factors may disproportionately affect DA boys. Our results from model testing implicate problem behaviors in the classroom, which were highest among DA boys, as one possible mechanism. Other characteristics of the classroom, including teacher-student relations, will be important to explore in future work as well (Hughes & Kwok, 2007; Suárez-Orozco & Qin-Hillard, 2005).

**Parenting and Academic Achievement**

Our test of a conceptual model of parenting highlighted how ethnic group membership (i.e., MA or DA) was associated with parenting, linked by maternal acculturative status and cultural
socialization, and is consistent with past studies (see Calzada et al., 2010; Calzada et al., 2012; Calzada et al., 2015). Unique to the present study is parenting as a predictor of children’s academic achievement through school readiness in academic and social-emotional domains. Findings illustrate the protective role of authoritative parenting practices. Authoritative parenting was associated with better academic and social-emotional school readiness, both of which were associated with higher academic achievement later on. Notably, the levels of authoritative parenting self-reported in the present study were high for all mothers, especially DA mothers, whereas the levels of authoritarian parenting were low, especially among DA mothers. There has been much discussion regarding parenting in the Latino culture (Cardona et al., 2000; Guilamo-Ramos et al., 2007; Rodriguez & Olswang, 2003), and our results indicate that authoritarian parenting may not be the norm for all Latino parents and that in fact, authoritative parenting may be culturally congruent, at least for MA and DA mothers of young children raising their children in NYC.

Still, consistent with past research (Calzada et al., 2010; Calzada et al., 2012; Calzada et al., 2015), culture was found to play an important role in parenting, with acculturation associated with the use of authoritative practices. Specifically, ethnic group membership was associated with mothers’ acculturative status, with DA mothers reporting greater ethnic and mainstream cultural knowledge, which was associated with more cultural socialization messages to the U.S. American value of independence and in turn, with more authoritative parenting. It seems that mothers who seek out or are exposed to more mainstream and more ethnic cultural knowledge are more likely to embrace the value of independence, and that these socialization messages of independence (e.g., “I encourage my child to tell me when s/he disagrees with me”) align with
the use of authoritative parenting practices (e.g., “I give my child reasons why rules should be obeyed”; Calzada et al., 2010; Calzada et al., 2012).

Surprisingly, the present study found no evidence of an effect of authoritarian parenting practices on Latino children’s early academic achievement, or on their teacher-rated problem behaviors, teacher-rated adaptive behaviors, or academic school readiness when they first started school. The influence of authoritarian parenting practices has been a controversial topic in the literature; authoritarian practices have been found to have no association, a negative association, or even a positive association with positive developmental outcomes among Latino children (Calzada et al., 2012; Calzada et al., 2015; Gorman-Smith, Tolan, Henry, & Florshim, 2000; Knight, Virdin, & Roosa, 1994). In fact, in a previous test of the model that considered child internalizing problems as the primary outcome (Calzada et al., 2015), authoritarian, but not authoritative, parenting practices were predictive of anxiety, depression and somatization. Taken together, these results suggest that the influence of parenting practices may vary across developmental outcomes, time points and contexts. How these dynamic effects of risk and protection may play out is an important area for future research. Until more is known about the complexities of parenting in relation to child development in Latino families, categorizations of authoritarian parenting as a risk factor and authoritative parenting as protective remain premature.

Limitations and Conclusions

There are several notable limitations to the present study. First, although we used longitudinal data to examine children’s academic achievement, we relied on cross-sectional data when examining associations between acculturative status, socialization messages, parenting practices, and children’s school readiness. Thus, while our data supports a conceptual model in which acculturative status shapes socialization messages and parenting practices, we were not
able to establish temporal ordering and causality cannot be inferred. Second, our measure of parenting practices was based on a Western typology (i.e., authoritarian, authoritative), and some scholars have questioned its applicability to Latino families (Domenech-Rodriguez, Donovick, & Crowley, 2009). Indeed, the authoritarian scale used in this study had modest reliability, and primarily included items related to harsh parenting. Thus, while the present study suggests that research on authoritarian/authoritative parenting in Latinos can be useful in understanding developmental outcomes, more scholarship on Latino parenting theory is needed to ensure cultural sensitivity.

Third, our model was limited to select family-level variables, and did not consider other ecological variables that undoubtedly influence academic achievement, including characteristics of the classroom and school. Our model explained a modest amount of the variance in teacher-reported problem and adaptive behavior, indicating the presence of other variables in shaping child functioning in the classroom. For example, teaching practices, cultural competence of teachers and other schools staff, bilingual education resources, and ethnic makeup of schools are likely important determinants of school readiness and academic achievement (Caldas & Bankston, 1997; Ma & Klinger, 2000; Rivkin, Hanushek, & Kain, 2005). Finally, our sample was limited to MA and DA families, and study findings cannot be generalized to other Latino families. The tremendous diversity of the Latino population has been well-described in the literature, and although we accounted for some sources of heterogeneity (i.e., ethnicity, child gender, grade when they entered school), we were not able to account for others such as immigrant status and English language proficiency, important next steps in this line of research.

While more work is needed to understand early academic achievement in Latino students, the present study makes a significant contribution to identifying malleable factors that may be
associated with early achievement. Findings suggest that efforts to support Latina mothers in engaging not only in their cultures of origin but also in mainstream culture may have positive effects on parenting. In turn, parenting that aims to encourage age-appropriate independence in young children and that relies on authoritative practices may promote the development of children’s early academic and social-emotional competencies, with positive effects on academic achievement in later years.
References


Table 1

Descriptive characteristics of the sample, by child ethnicity, gender, and grade

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<tr>
<th></th>
<th>Descriptive Statistics $^a$</th>
<th>Ethnicity Differences $^b$</th>
<th>Gender Differences $^c$</th>
<th>Grade Differences $^d$</th>
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</thead>
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<tr>
<td></td>
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<td>$D\alpha$</td>
<td>Boys $^e$</td>
<td>Pre-K $^f$</td>
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<tr>
<td></td>
<td>$M \pm SD / n$ (%)</td>
<td>$DA^c$</td>
<td>Girls $^e$</td>
<td>K $^g$</td>
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<tr>
<td>Child age</td>
<td>4.46 ± .60</td>
<td>4.42 ± .62</td>
<td>4.51 ± .58</td>
<td>3.87 ± .34</td>
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<td>(t-test = -1.84)</td>
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<td>4.84 ± .38</td>
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<td>Child gender (boys)</td>
<td>249 (47.2)</td>
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<td>108 (48.2)</td>
<td>95 (45.7)</td>
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<td></td>
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<td>154 (48.3)</td>
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<td>(Chi$^2$ = .34)</td>
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<td>Child foreign-born</td>
<td>41 (7.9)</td>
<td>8 (2.7)</td>
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<td>9 (4.4)</td>
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<tr>
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<td>(Chi$^2$ = 26.04***</td>
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<td>32 (10.2)</td>
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<td>Mothers’ age</td>
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<td>31.27 ± 5.62</td>
<td>34.01 ± 7.72</td>
<td>32.11 ± 5.93</td>
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<td>(t-test = -4.70***</td>
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<td>32.64 ± 7.19</td>
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<td></td>
<td></td>
<td></td>
<td>(t-test = -.87)</td>
</tr>
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<td>Child language</td>
<td>258 (49.2)</td>
<td>111 (36.8)</td>
<td>147 (66.2)</td>
<td>82 (40.0)</td>
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<tr>
<td>preference (English)</td>
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<td>(Chi$^2$ = 44.43***</td>
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<td>176 (55.2)</td>
</tr>
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<td>Mothers’ ethnicity</td>
<td>303 (57.5)</td>
<td>-</td>
<td>141 (56.6)</td>
<td>127 (61.1)</td>
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<tr>
<td>(MA)</td>
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<td>176 (55.2)</td>
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<td>Mother education</td>
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<td>277 (91.4)</td>
<td>113 (50.7)</td>
<td>144 (69.2)</td>
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<tr>
<td>(% ≤ high school)</td>
<td></td>
<td>(Chi$^2$ = 111.25***</td>
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<td>246 (77.4)</td>
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<td>Mother works for pay</td>
<td>243 (46.5)</td>
<td>96 (31.9)</td>
<td>147 (66.2)</td>
<td>75 (36.4)</td>
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<td></td>
<td></td>
<td>(Chi$^2$ = 60.51***</td>
<td></td>
<td>168 (53.0)</td>
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<tr>
<td>Mother foreign-born</td>
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<td>192 (92.8)</td>
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<td></td>
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<td>(Chi$^2$ = 33.62***</td>
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<td>293 (91.8)</td>
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<td>Mothers’ English</td>
<td>2.12 ± .85</td>
<td>1.81 ± .61</td>
<td>2.53 ± .94</td>
<td>2.12 ± .83</td>
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<td>proficiency</td>
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<td>2.11 ± .87</td>
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<td></td>
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<td>2.17 ± .86</td>
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<tr>
<td>Mothers’ Spanish</td>
<td>3.62 ± .52</td>
<td>3.57 ± .56</td>
<td>3.67 ± .47</td>
<td>3.63 ± .53</td>
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<tr>
<td>proficiency</td>
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<td>(t-test = -2.22*</td>
<td></td>
<td>3.60 ± .52</td>
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<td></td>
<td></td>
<td>3.63 ± .50</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>3.61 ± .54</td>
</tr>
</tbody>
</table>
Family poverty status  | 370 (73.1) | 239 (83.0) | 131 (60.1) | 181 (75.4) | 189 (71.1) | 148 (74.7) | 222 (72.1) |
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<td></td>
<td>($\chi^2 = 33.09^{***}$)</td>
<td>($\chi^2 = 1.22$)</td>
<td>($\chi^2 = .43$)</td>
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</tbody>
</table>

*Note.* MA = Mexican American; DA = Dominican American; Pre-K = Pre-kindergarten; K = Kindergarten; Because a full information procedure (FIML) estimates parameters for missing data based on all available data instead of imputing, the number of cases differs.

$^a$N = 506 to 527; $^b$n = 288 to 303; $^c$n = 218 to 224; $^d$n = 240 to 249; $^e$n = 266 to 278; $^f$n = 198 to 208; $^g$n = 308 to 319.
Table 2

*Descriptive analysis of latent variables of the sample, by child ethnicity, gender, and grade*

<table>
<thead>
<tr>
<th></th>
<th>Descriptive Statistics</th>
<th>Ethnicity Differences</th>
<th>Gender Differences</th>
<th>Grade Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M \pm SD$</td>
<td>MA $^b$</td>
<td>DA $^c$</td>
<td>$t$-test</td>
</tr>
<tr>
<td>U.S. identity</td>
<td>$2.56 \pm .93$</td>
<td>2.22±.86</td>
<td>3.01±.84</td>
<td>-10.6***</td>
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<tr>
<td>Ethnic identity</td>
<td>$3.87 \pm .35$</td>
<td>3.91±.29</td>
<td>3.83±.41</td>
<td>2.6*</td>
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<tr>
<td>U.S. cultural knowledge</td>
<td>$1.97 \pm .72$</td>
<td>1.64±.54</td>
<td>2.42±.69</td>
<td>-14.0***</td>
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<td>Ethnic cultural knowledge</td>
<td>$2.70 \pm .77$</td>
<td>2.63±.75</td>
<td>2.80±.78</td>
<td>-2.5*</td>
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<tr>
<td>Socialization of Independence</td>
<td>$4.42 \pm .43$</td>
<td>4.37±.42</td>
<td>4.48±.44</td>
<td>-2.8**</td>
</tr>
<tr>
<td>Socialization of Respeto</td>
<td>$4.30 \pm .52$</td>
<td>4.27±.51</td>
<td>4.33±.54</td>
<td>-1.3</td>
</tr>
<tr>
<td>Authoritative practices</td>
<td>$4.35 \pm .63$</td>
<td>4.24±.66</td>
<td>4.50±.54</td>
<td>-4.8***</td>
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<tr>
<td>Authoritarian practices</td>
<td>$1.56 \pm .50$</td>
<td>1.62±.50</td>
<td>1.49±.48</td>
<td>2.9**</td>
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</tbody>
</table>

*Note.* MA = Mexican American; DA = Dominican American; Pre-K = Pre-kindergarten; K = Kindergarten; Because a full information procedure (FIML) estimates parameters for missing data based on all available data instead of imputing, the number of cases differs.

$^a$N = 479 to 527. $^b$n = 279 to 303. $^c$n = 200 to 224. $^d$n = 229 to 249. $^e$n = 250 to 278. $^f$n = 191 to 208. $^g$n = 288 to 319.
Table 3

School readiness and academic achievement by child ethnicity, gender, and grade

<table>
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<tr>
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<th>Full Sample</th>
<th>MA</th>
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<th>t-test or $\chi^2$</th>
<th>Boys</th>
<th>Girls</th>
<th>t-test or $\chi^2$</th>
<th>Pre-K</th>
<th>K</th>
<th>t-test or $\chi^2$</th>
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<tr>
<td></td>
<td>$M \pm SD$ (%)</td>
<td>$M \pm SD$ (%)</td>
<td>$M \pm SD$ (%)</td>
<td>$M \pm SD$ (%)</td>
<td>$M \pm SD$ (%)</td>
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<td>$M \pm SD$ (%)</td>
<td>$M \pm SD$ (%)</td>
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<tr>
<td>SEL School Readiness</td>
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<tr>
<td>Problem behaviors</td>
<td>46.89± 6.98</td>
<td>45.99± 6.05</td>
<td>48.16± 7.95</td>
<td>-3.25***</td>
<td>47.79± 8.00</td>
<td>46.04± 5.73</td>
<td>2.76***</td>
<td>45.99± 6.02</td>
<td>47.48± 7.49</td>
<td>-2.42*</td>
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<tr>
<td>Adaptive behaviors</td>
<td>46.72± 7.77</td>
<td>45.95± 7.45</td>
<td>47.80± 8.10</td>
<td>-2.58*</td>
<td>45.82± 7.35</td>
<td>47.55± 8.06</td>
<td>-2.46*</td>
<td>45.88± 7.26</td>
<td>47.28± 8.06</td>
<td>-1.98*</td>
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<tr>
<td>Academic School Readiness</td>
<td>22.06± 7.32</td>
<td>20.83± 7.30</td>
<td>23.72± 7.01</td>
<td>-4.56***</td>
<td>21.75± 7.33</td>
<td>22.32± 7.30</td>
<td>- .89</td>
<td>16.37± 6.03</td>
<td>25.75± 5.48</td>
<td>-18.43***</td>
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<td>Speed DIAL-3</td>
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<tr>
<td>KTEA</td>
<td>96.56± 14.18</td>
<td>95.99± 12.88</td>
<td>97.34± 15.80</td>
<td>-1.03</td>
<td>96.33± 14.84</td>
<td>96.76± 13.60</td>
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<td>98.02± 12.89</td>
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<tr>
<td>% at risk on KTEA</td>
<td>(18.5%)</td>
<td>(16.4%)</td>
<td>(21.8%)</td>
<td>(2.39)</td>
<td>(20.7%)</td>
<td>(16.8%)</td>
<td>(1.23)</td>
<td>(11.9%)</td>
<td>(23.0%)</td>
<td>(10.01)**</td>
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</tbody>
</table>

Note. DIAL-3 was measured by the abbreviated version of the Developmental Indicators for the Assessment of Learning-Third edition (Speed DIAL-3) at baseline. KTEA was measured by the Kaufman Test of Educational Achievement, Second Edition, Brief Form (KTEA-II) at the end of first grade. MA = Mexican American; DA = Dominican American; Pre-K = Pre-kindergarten; K = Kindergarten. Because a full information procedure (FIML) estimates parameters for missing data based on all available data instead of imputing, the number of cases differs.

*p < .05. **p < .01. ***p < .001
Table 4

*Correlations among latent variables*

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</table>

*p < .05.  ** p < .01.  *** p < .001*
Figure 1. Cultural framework of Latino parenting and student academic achievement
Figure 2. Structural model with significant standardized estimates. The model results were the same with and without grade as a covariate associated with academic achievement. However, two estimates increased when including grade: (1) the estimate of academic readiness associated with academic achievement was significant in both models, but higher estimate with grade as a covariate; and (2) the explained variance in academic achievement.