

Trajectories of low-income mothers' and fathers' engagement in learning activities and child socioemotional skills in middle childhood

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Funding information

Eunice Kennedy Shriver National Institute of Child Health & Human Development, Grant/Award Number: R01HD078547

Abstract

Using Fragile Families and Child Wellbeing data ($N = 3259$), the current study examined Black and Latinx mothers' and fathers' trajectories of engagement in learning activities (e.g., storytelling) from infancy to age 5, and whether those trajectories predicted socioemotional skills at age 9, predictors of the trajectories (poverty, mother-father non-residence, temperament, race/ethnicity), and moderators of the trajectories. Mothers' and fathers' learning activities decreased significantly over time as children got older. Higher rates of decline in fathers' engagement in learning activities over time significantly predicted lower socioemotional skills. Mother-father nonresidence during infancy was associated significantly with higher rates of decline in mothers' and fathers' learning activities. Difficult temperament moderated the association between fathers' trajectories and child outcomes.

KEYWORDS

father engagement, fragile families and child wellbeing, learning activities, middle childhood, mother engagement, socioemotional skills

1 | INTRODUCTION

The development of socioemotional skills (e.g., forming and sustaining relationships with others, experiencing, managing, and expressing emotions) during early and middle childhood are foundational milestones that support future learning and development across developmental periods (Sroufe et al., 2005). Socioemotional skills influence children's self-confidence, empathy, and ability to develop meaningful and lasting friendships and partnerships

(Fabes et al., 2006). Socioemotional skills also correlate with overall well-being and school success during middle childhood (McCormick et al., 2013; Taylor et al., 2015) and educational attainment, employment success, avoidance of criminal activity and substance use, and positive mental health during adulthood (Jones et al., 2015). Parents and other caregivers foster socioemotional skills by being affectionate and nurturing but also through engaging in learning activities such as reading, storytelling, and playing with toys that provide joy and teach children to take turns, pay attention, listen, and resolve conflict (Belsky, 1990). Any disruption to the quality of parenting is concerning because it has the likelihood of interfering with this process, with potentially long-term negative consequences for children (Fabes et al., 2006). The importance of supportive and nurturing parenting has prompted researchers to examine early childhood parenting predictors of socioemotional skills during middle childhood because early intervention can change a child's developmental trajectory and improve outcomes.

Although it is changing, most studies still focus primarily on mothers' influences on children's socioemotional skills. Recent advances in research have shown that it is also important to account for fathers' influences on children's development (Leidy et al., 2012; Schoppe-Sullivan & Fagan, 2020). However, relatively fewer studies of parenting consider the fact that mothers' and fathers' parenting behavior changes over time, depending on multiple factors including normative developmental changes in both parents and children and other factors such as child's temperament, parents residing in separate households, job demands, or loss of household income (Tang & Sinanan, 2015). From a developmental perspective, it is expected that parents' behavior changes to accommodate and promote children's new skills at each developmental stage. For instance, as children get older they engage in more independent reading and rely less on parents reading to them. However, alongside these normative changes, there are other family processes that might change parents' behavior in negative ways. Parents who are economically stressed are at greater risk than middle- and high-income parents for exposure to various risk factors (e.g., family instability), and although there is tremendous variability in their parenting quality, they are also at greater risk for parenting behavior changes (Cavanagh & Fomby, 2019).

Framed within the life course theoretical perspective (Elder, 1998), we used data from the Fragile Families and Child Wellbeing study (FFCW) and ask: (1) how do low-income Black and Latinx mothers' and fathers' engagement in learning activities (reading, storytelling, singing, playing with toys) change from infancy to preschool? (2) are mothers' and fathers' changes in learning activities over time associated with children's socioemotional skills at age 9? (3) are changes in mothers' and fathers' engagement in learning activities associated with parents' co-residence, family poverty, race/ethnicity, and child temperament? (4) does the association between changes in mothers' and fathers' learning activities and children's socioemotional skills at age 9 vary by co-residence, family poverty, and child temperament?

1.1 | Theoretical foundation

The life course perspective suggests that individuals' lives are constantly changing, and these changes follow trajectories that have developmental implications for the individual and others with whom they are involved (Elder, 1998). The notion of changing lives can be applied to parents' behavior toward children. Mothers and fathers may become more involved with their children over time, less involved with their children, or maintain stable levels of involvement.

Changes in parenting are to be expected as children grow older. As children acquire new skills (e.g., become more independent), parents must engage with their children differently in response to their children's new skills. Despite the normative changes in parenting, longitudinal studies with large samples of mothers have shown there is a relatively high level of stability in some parenting behaviors throughout the early childhood years (Dallaire & Weinraub, 2005; Gutman & Feinstein, 2010). Observational data from a twin study assessing mothers' stimulation of cognitive development (extent to which the parent demonstrates effortful teaching of the child to enhance cognitive, language, and perceptual development) showed, on average, stable levels of these behaviors from ages 2 to 4 years (Tucker-Drob & Harden, 2012). Reading to children has been found to increase from infancy to toddlerhood

(Cabrera et al., 2021), remain stable through the remainder of early childhood, and then decline as children become independent readers at around age 6 or 7. Research conducted with low-income mothers whose children were enrolled in Early Head Start indicated that, on average, just under 50% of mothers read every day to their 14-month-old children, and their daily reading increased slightly and remained stable when children were 24 months and 36 months old (Raikes et al., 2006). Research with a U.S. national sample of Latinx families showed that maternal reading increased from infancy to age 60 months when children were ready to enter school (Cabrera et al., 2021). However, not all parenting behaviors remain stable or increase during early childhood. Most parents sing less to their young children as they get older (Cabrera et al., 2021; Yan et al., 2021).

Fewer studies have examined changes in fathers' engagement with young children. In one of the few available studies with a Portuguese sample of dual-earner parents and their preschool-age children (ages 31–69 months), Ferreira et al. (2018) found that fathers' participation in positive engagement activities (e.g., playing with children, art activities) started out lower than mothers but increased over time, whereas mothers' engagement with children started out higher than that of fathers and remained stable over time. Using data from the Early Childhood Longitudinal Survey, Cabrera et al. (2021) found that Latinx fathers are more likely to read and tell stories to their older children (24–60 months) than to their infants. Data from low-income, mostly unmarried, parents in the FFCW study revealed declining levels of father engagement in learning activities (e.g., reading and playing with toys) from infancy to age 5 (McClain & DeMaris, 2013).

Changes in parenting behavior are likely to be most pronounced in families experiencing stressors such as poverty that may interfere directly with sustained engagement with children (Harlam & Burke, 2018; Ryan et al., 2008). Using U.S. national data, Tang and Sinanan (2015) found that family poverty predicted higher levels of maternal detachment and negative regard over the course of early childhood. Mothers and fathers who do not reside together also may be at higher risk for declining parent engagement trajectories (Mincy et al., 2015). Cheadle et al. (2010) found that, over a period of 14 years from 1975 to 1989, 23% of nonresident fathers exhibited a pattern of declining involvement. Fathers who do not reside with newborn children may be at even greater risk for decreasing engagement over time than fathers who reside with their newborns because the first group of fathers has fewer opportunities to bond with the child (Cabrera et al., 2011). For example, Cabrera et al. (2012) found that low-income, nonresident fathers who were uninvolved with their children during infancy and toddlerhood, on average, were less likely to have close relationships with their children at age 8, as reported by the children themselves. We are not aware of research that has examined the engagement trajectories of low-income mothers whose parenting partners do not reside with them. In theory, one might expect that these mothers would show stable levels of engagement in developmental activities with young children because of societal pressures for women to conform to the motherhood role (Bianchi et al., 2012). But, single mothers also face increasing demands on their time (e.g., work, preparing meals) that may decrease their available time to spend on activities with children.

Child temperament also influences parenting trajectories and child outcomes. Studies based on concurrent data show that difficult temperament is associated with less maternal responsiveness (Kochanska & Kim, 2013), sensitivity, affection, positive affect (Ghera et al., 2006; Laukkanen et al., 2014), parent–child closeness (Acar et al., 2018), and greater negative control (Laukkanen et al., 2014). Studies examining parenting behavior changes over the course of early childhood have shown that temperament (fear, irritability, effortful control) and parenting (rejection, inconsistent discipline) predict changes in each other (Lengua, 2006). In one of the few studies with fathers, low regulatory behaviors in infants were related longitudinally to less father cognitive stimulation with toddlers (Cabrera et al., 2008). Studies also indicate that difficult temperament during infancy is associated negatively with socioemotional skills. Zhang et al. (2022) found that difficult temperament at age 6 months predicted children's socioemotional behavior (higher levels of externalizing behavior) between ages 8 and 11, but only when mothers were more unsupportive of them during early childhood.

Children's socioemotional skills are influenced by various parenting behaviors, including but not limited to parent engagement in play (Bohlin et al., 2000), parental positivity (Brown & Fredrickson, 2021), parental sensitivity (Ding et al., 2020), and inductive parental discipline (Tompkins & Villaruel, 2022). Recently, researchers have suggested

that low-income ethnic minority parents prefer home-based forms of engagement over school-based engagement to socialize their young children (Seginer, 2006). For example, researchers found that Latinx parents often shared stories and parables and encouraged and modeled proper behavior as a means to promote children's socioemotional skills (Bridges et al., 2012; Cabrera et al., 2021; Chao & Kanatsu, 2008). Parental engagement in learning activities promotes positive interactions between parents and children that require children to cooperate, take turns, have self-control, and be attentive, all of which are important for development of socioemotional skills. Studies have shown that Latinx parental engagement in learning activities (e.g., telling stories, singing culturally relevant songs) is associated significantly with children's social skills (McWayne et al., 2016), and research with middle-income families found that improvements in mothers' involvement in children's learning in school and at home predicted positive changes in mother- and teacher-reported child social skills during elementary school (El Nokali et al., 2010). These studies indicate the importance of examining mothers' and fathers' trajectories of parental engagement in learning activities in relation to children's socioemotional skills. Although normative changes in parent engagement with children are expected (Yan et al., 2021), significant declines in parents' engagement in learning activities may have negative ramifications for children's socioemotional development.

The timing of life events is another important tenet of the life course perspective (Elder, 1998). Being involved early (i.e., when children are infants) affords parents the opportunity to develop relationships with the child, which may strengthen their commitment and engagement over time. Longitudinal studies with middle-income parents have shown that mothers' and fathers' initial level of involvement with infants positively predicted behavioral self-control in 4-year-old children (Ferreira et al., 2018), and responsive and sensitive parenting of infants correlated with socioemotional wellbeing in school-age children (e.g., Bohlin et al., 2000; Mills-Koonce et al., 2022). These studies are consistent with the idea that parents' engagement of children in learning activities as early as possible (i.e., during infancy) is likely to be associated with positive socioemotional skills in middle childhood.

1.2 | Race/ethnicity

Latinx and Black children lag behind their White peers in all measures of achievement (Padilla et al., 2017; Reardon & Portilla, 2016). Compared to White children, Latinx and Black children in the United States have different home and school experiences that affect child outcomes even after controlling for socioeconomic status. For example, although 27% of Latinx children live in poverty, the majority of them live in two-parent households with parents who are stably employed but have low levels of education (Gennetian et al., 2019). Comparatively, fewer Black children live in poverty, but they are more likely to live in single mother households who have higher levels of education than Latinx children's mothers (Kuhns et al., 2018). Moreover, compared to Latinx children, Black children are more likely to be spanked at home and suspended or expelled from school (Bali & Alvarez, 2004). In short, Latinx and Black children experience different family and school dynamics that may explain in part differential child outcomes (Kuhns et al., 2018; Potter & Morris, 2017). For example, despite Black children having more educated parents, being read to more often, and having parents who engaged in more cognitively stimulating activities with them at home than Latinx children, Latinx children were rated by their teachers as being more socially competent than Black children (Padilla et al., 2017). We know of no studies that have examined the parenting trajectories of Latinx and Black children specifically and how these trajectories are associated with children's socioemotional outcomes, thus this study addresses an important gap in the literature.

1.3 | Current study

Although researchers do not often agree on the definition of socioemotional skills, there is some consensus that socioemotional skills include relational/prosocial and emotional competence skills (Denham et al., 2009). The current

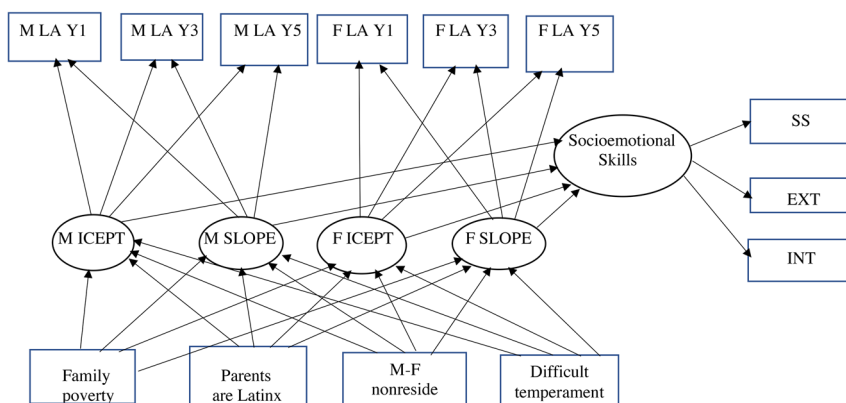


FIGURE 1 Latent growth curve model with child socioemotional skills at Y9 (latent variable) as the outcome. M, mother; F, father; LA, learning activities; ICEPT, intercept; SS, social skills; INT, internalizing (reversed); EXT, externalizing (reversed); Child sex at birth is controlled. Reference group for Latinx is Black. Covariances between intercept and slope errors are included but not shown.

study conceptualizes socioemotional skills as a combination of these skills (cooperation, assertiveness, self-control) and low levels of emotional and behavioral problems (see Elliott et al., 1988; Madigan et al., 2018). We modeled latent trajectories of Black and Latinx mothers' and fathers' engagement in learning activities at three timepoints (infancy, toddlerhood, and preschool-age) to determine whether and how these constructs change over time and how they are associated with children's socioemotional skills at age 9 (see Figure 1). Latent growth curve models estimate an intercept (starting point) and trajectory (the rate of change over time). Based on correlational research showing Latinx parents are less engaged in learning activities than Black parents (Padilla et al., 2017), we hypothesized that mothers' and fathers' intercept (infancy) would be significantly lower among Latinx parents than Black parents, and we expected that parents' intercepts would be negatively related to poverty, nonresidence, and difficult temperament (Hypothesis 1). We hypothesized that family poverty (Tang & Sinanan, 2015), mother-father nonresidence (Cabrera et al., 2012), and difficult temperament (Lengua, 2006) would be associated significantly with declines in mothers' and fathers' engagement in learning activities over the course of early childhood (Hypothesis 2). Family poverty (poor vs. non-poor) and nonresidence are dichotomous variables in the current study whereas difficult temperament is conceptualized along a continuum ranging from low to high. We examined the association between race/ethnicity and parents' engagement in learning activities trajectories, but we do not offer an hypothesis for this relationship. Based on studies showing significant associations between positive parenting of infants and socioemotional wellbeing in school-age children (e.g., Bohlin et al., 2000; Mills-Koonce et al., 2022), we hypothesized that higher levels of mothers' and fathers' engagement in learning activities during infancy (intercept) would be positively associated with socioemotional skills at age 9 (Hypothesis 3).

A number of exploratory analyses were conducted in the current study. We explored the growth trajectories of mothers' and fathers' engagement in learning activities from ages 1 to 5 (Exploratory Analysis 1). We do not suggest hypotheses for mothers' and fathers' average trajectories of engagement in learning activities across the full sample of participants because some studies show increases in low-income mothers' and fathers' engagement with children (e.g., Cabrera et al., 2021), whereas other studies show decreases in mothers' and fathers' engagement over the course of early childhood (McClain & DeMaris, 2013; Yan et al., 2021). We explored the associations among mothers' and fathers' trajectories and socioemotional skills in children at age 9 (Exploratory Analysis 2).

We conducted multigroup models to explore whether family poverty, mother-father nonresidence, and difficult temperament moderated the associations between mothers' and fathers' changes in learning activities (slope) and child socioemotional skills at age 9 (Exploratory Analysis 3). Finally, based on research showing different family

dynamics among Latinx and Black parents (Kuhns et al., 2018; Potter & Morris, 2017), multigroup models were used to explore whether the associations between race/ethnicity and initial level of engagement with children (intercept) and change in parent engagement (slope) varied by poverty and coresidential status (Exploratory analysis 4). Child sex at birth was controlled in our models.

2 | METHOD

This study used the FFCW dataset which followed a cohort of nearly 5000 children born in the United States between 1998 and 2000. When weighted, the data are representative of nonmarital births in large U.S. cities at the turn of the century (*About the Fragile Families & Child Wellbeing Study*, n.d.). The sampling approach resulted in a large number of Black, Hispanic, and low-income families and oversampled births to unmarried couples (McLanahan & Garfinkel, 2000). Spanish speaking parents were not included in the study. Fathers and mothers were interviewed shortly after the birth of their focal child (baseline) and again when children were ages 1 (Y1), 3 (Y3), 5 (Y5), 9 (Y9), and 15 (Y15). Children were interviewed at Y9 and Y15. The FFCW study included 3712 unwed couples and 1186 married couples at baseline. The analytic sample in the present study was limited to cases in which both mothers and fathers were non-Hispanic Black or both fathers and mothers were Latinx, and children resided all or most of the time with the biological mother. In addition 200 cases were omitted because all data on father and mother engagement in learning activities were missing in all waves. The final analytic sample was 3259 parents and children.

2.1 | Analytic sample characteristics

Table 1 shows that the majority of mothers and fathers in the sample were Black (65.8%); 34.2% were Latinx. Nearly 61% of mothers and 48% of fathers completed a high school education or less. Mother-father coresidence (defined as living together all or most of the time) included 45.2% of couples at Y1. Only 18.9% of couples were married at Y1. About 47% of mothers and 25.5% of fathers reported incomes below the poverty line. On average, fathers and mothers were approximately 27 and 25 years old, respectively, at baseline.

2.2 | Measures

Child socioemotional skills were measured with the teacher version of the Social Skills Rating System (SSRS-T) using items from the cooperation, assertion, self-control, and social problems subscales (Gresham & Elliott, 1984). The SSRS-T is a reliable and valid teacher rating scale of children's social behavior in terms of stability, internal consistency, inter-rater reliability, and construct and criterion validity (Elliott et al., 1988). The Y9 survey contains 38 items in which teachers are asked to rate the child's behavior from 1 = *never* to 4 = *very often*. Sample items include: follows your directions (cooperation), makes friends easily (assertion), and controls temper in conflict situations with others (self-control). Sample items from the social problems subscales include: fights with others (externalizing) and appears lonely (internalizing). Items from the cooperation, assertion, and self-control subscales were added together to assess total social skills (SS, $\alpha = .97$), per recommendation of the instrument developers. Correlations among the social skills subscales ranged from .60 to .72, further justifying use of the total social skills subscale. To assess social problems, the externalizing (EXT, $\alpha = .93$) and internalizing (INT, $\alpha = .82$) scales were each included in the current study.

A measurement model consisting of the SS, reversed EXT, and reversed INT scales was tested. This model produced a good fit to the data: $\chi^2(3) = 16.78, p < .001$; CFI = .99, RMSEA = .04 [90% CI = .02-.05]. We used the label socioemotional skills for this latent variable in subsequent multivariate analyses.

TABLE 1 Participant characteristics

Variable	n	%	M	SD
M-F coreside Y1	1474	45.2		
Missing	396	12.2		
M-F married Y1	617	18.9		
Missing	376	11.5		
Race/ethnicity				
Black	2146	65.8		
Latinx	1113	34.2		
Age of parent at baseline				
Father			27.26	7.15
Mother			24.64	5.79
Child sex at birth				
Male	1706	52.3		
Female	1553	47.7		
M household income Y1			23,558	23,292
F household income Y1			30,732	30,191
M family poverty Y1	1536	47.1		
Missing	372	11.4		
F family poverty Y1	831	25.5		
Missing	1096	33.6		
F education Y1				
Less than HS	820	25.2		
HS or equivalent	743	22.8		
Some college	477	14.6		
College graduate	108	3.3		
Missing	1111	34.1		
M education Y1				
Less than HS	1058	32.5		
HS or equivalent	912	28.0		
Some college	771	23.7		
College graduate	143	4.4		
Missing	375	11.5		

Note: M-F married at Y1 was not included in our multivariate analyses.

Parent engagement in learning activities were assessed with four identical items from the mother and father surveys at Y1, Y3, and Y5. These items, which have been used widely in FFCW studies (e.g., McClain & DeMaris, 2013), include sings songs or nursery rhymes, reads stories, tells stories, and plays inside with toys. All items are based on a scale with responses ranging from 0 = no days to 7 = seven days per week. These items were added together during each wave of data collection to construct composites of mother engagement and father engagement in learning activities (ranges = 0–28). The Cronbach's alpha for the composites were: mothers' Y1 = .67, mothers' Y3 = .71, mothers' Y5 = .68, father's Y1 = .82, father's Y3 = .86, and father's Y5 = .84.

2.2.1 | Predictors

We used a FFCW constructed variable from the Y1 survey to assess mother-father *nonresidence* (i.e., not coresiding), which included parents who were not married or cohabiting. Mothers were asked whether or not they live together all or most of the time or seven days per week (0 = *coreside*, 1 = *nonresident*).

Race/ethnicity was measured at baseline with constructed variables based on the combined mother and father reports indicating whether the parents were Non-Hispanic White, non-Hispanic Black, Hispanic, or Other. Only Black and Hispanic parents were included in the analytic sample.

Mothers' and fathers' total household income and size were used to assess *poverty* at Y1. Poverty status for each parent was measured by dividing total household income in the prior 12 months by the official poverty threshold for the year in which the interview was conducted. The FFCW constructed variables included five poverty categories: 1 = 0%–49% of the poverty line, 2 = 50%–99%, 3 = 100%–199%, 4 = 200%–299%, 5 = 300%+. Poverty was recoded so that 1 = less than 100% of the poverty line and 0 = 100% of the poverty line or greater. We were not able to examine mothers' poverty in relation to mothers' learning activities and fathers' poverty in relation to fathers' learning activities because mothers' and fathers' poverty measures were not mutually exclusive (e.g., both mothers and fathers who lived together reported on household poverty). We only used mother's poverty score in subsequent analyses because all children resided with the mother in the analytic sample.

Child's *difficult temperament* at Y1 was assessed with the three emotionality items from Buss and Plomin's (1984) EAS Temperament Survey for Children. Items are measured on a scale from 1 = *least like* to 5 = *most like* and include: child often fusses and cries, child gets upset easily, and child reacts strongly when upset. Only the items from mothers' questionnaire were used because fathers in two cities were only asked these questions if they had sole custody of the child. Items were summed to construct a measure of *difficult temperament* (range = 3–15); higher scores suggest more negative reactivity ($\alpha = .60$).

2.2.2 | Control

Child sex at birth was controlled in the multivariate analyses. Mothers' baseline data were used to assess child sex (1 = *girl*, 0 = *boy*).

2.3 | Data analysis

We first calculated descriptive statistics for all study variables. Next, Little's (1988) test was conducted to determine whether or not the data were missing at random. Based on the findings of Little's test, we then planned to conduct bias analyses to determine whether or not cases that were missing teacher ratings of children's social skills at Y9 and learning activities data at Y1, Y3, and Y5 differed on demographic characteristics from cases that were not missing data. Next, we calculated Pearson correlation coefficients for all study variables and a confirmatory factor analysis using the three socioemotional skills variables (SS, reversed EXT, and reversed INT).

Latent growth curve modeling (with AMOS) was used to examine the study hypotheses and exploratory questions. First, unconditional models (i.e., growth models without any predictors) were estimated to identify the shape of growth in mother and father learning activities. Second, conditional growth models were tested to examine the impact of the predictors on growth in learning activities, and to examine associations between the growth parameters and children's socioemotional skills at Y9. Third, multiple group analysis was used to examine and compare the structural equation models for Black versus Latinx parents, coresiding versus nonresident parents, poor versus non-poor parents, and children with temperaments above the median versus children below the median (this variable was dichotomized at the median in order to conduct the multigroup analysis). The models were constrained to determine whether there

was a significant decrease in fit when paths were constrained to equality. Full information maximum likelihood (FIML) estimation was used to handle all missing data. For all models, requirements for good model fit included comparative fit indices (CFI) of .90 or higher and root-mean-square error of approximation (RMSEA) values of less than .06 (Kline, 2005). MacCallum et al. (1996) indicate that RMSEA of .08 is considered mediocre fit. The chi-square goodness of fit statistic is also reported for all models. Because we conducted multiple growth curve analyses in this study, we adjusted for familywise error using Bonferroni's correction. We corrected for five different comparisons by establishing an alpha level of .05 divided by 5 = .01. We used Betas to indicate effect sizes. Acock (2014) suggests that $\beta < .2$ is considered weak, $.2 < \beta < .5$ is moderate, and $\beta > .5$ is strong.

3 | RESULTS

3.1 | Missing data analyses

Little's (1988) test showed that the data were not missing completely at random ($\chi^2[1089] = 1296, p < .001$). Race/ethnicity, which was missing no cases, was associated significantly with missingness for EXT, INT, and SS ($\chi^2[1] = 13.23, 14.81, 13.15, ps < .001$, respectively). Data were more likely to be missing for Latinx children (61%, 61%, 63%) versus Black children (54%, 54%, 57%). Race/ethnicity was associated significantly with missingness for mother's learning activities at Y1, Y3, and Y5 ($\chi^2[1] = 70.91, 12.46, 10.40 ps < .001$, respectively), and father's learning activities at Y1, Y3, and Y5 ($\chi^2[1] = 4.52, 6.56, 3.93, ps$ range from .01 to .048, respectively). Learning activities data were more likely to be missing for Latinx mothers (33.6%, 18.9%, 20.5%) than Black mothers (20.2%, 14.1%, 14.4%), and for Latinx fathers (44.7%, 37.8%, 39.1%) than Black fathers (40.9%, 33.3%, 35.6%).

One method to handle data that are not missing at random is to include auxiliary variables in the growth curve analysis. Auxiliary variables are expected to be related significantly to missingness on the key variables in the model (Collins et al., 2001). These variables have the most impact when the amount of missing values is greater than 25% (Collins et al., 2001), which is the case in the current study. We included race/ethnicity, which is correlated with missingness and can serve as an auxiliary variable.

3.2 | Descriptive analyses

Multiple imputation with 20 iterations was conducted before calculating descriptive statistics. Mother's mean learning activities item scores were 4.66 at Y1 (just under 5 days per week), and 4.53 at Y3 and 4.47 at Y5 (about 4½ days per week, respectively; see Table 2). Father's mean learning activities item scores were 3.40 at Y1 (3½ days per week), 3.19 at Y3 (3 days per week), and 2.60 at Y5 (2½ days per week). The mean item score for SS was 2.84 (item scores range from 1–4), indicating that teachers perceive children to show positive social skills "often." The mean scores for INT and EXT (not reverse scored) were 1.64 and 1.63 (item scores range from 1–4), indicating that teachers perceive children to "sometimes" display internalizing and externalizing behavior. *T*-tests showed that Black mothers were significantly more engaged than Latinx mothers in learning activities at all three times (see bottom of Table 2). Latinx fathers were significantly more engaged at Y3 and Y5. Latinx children had significantly higher SS and EXT scores, but lower INT scores, than Black children.

3.3 | Bivariate analyses

Pearson correlation coefficients ranged from .43 to .53 ($ps < .001$) for associations among mothers' learning activities at Y1, Y3, and Y5 (see Table 2). Correlations for fathers' learning activities were also between .43 and .53 ($ps < .001$).

TABLE 2 Correlation matrix (N = 3259)

	MLAY1	MLAY3	MLAY5	FLAY1	FLAY3	FLAY5	SS	INT	EXT	Difficult temp.
Pooled	MLAY1	MLAY3	MLAY5	FLAY1	FLAY3	FLAY5	SS	INT	EXT	Difficult temp.
	1									
	MLAY3	1								
	MLAY5	.52***	1							
	FLAY1	.43***	.53***	1						
	FLAY3	.11***	.09***	.07**	1					
	FLAY5	.09***	.10***	.47***	.53***	1				
	SS	.12***	.13***	.43***	.04	.04	1			
	INT	.01	-.02	.03	.04	.04	.29***	1		
	EXT	-.01	-.01	-.04	.02	.05*	.68***	.16***	1	
	Difficult temp.	-.10***	-.06**	-.06**	-.05*	-.02	-.05*	-.01	-.05*	1
	M	18.63	18.12	17.88	13.60	12.74	73.88	18.94	19.12	10.99
	SD	6.34	6.66	6.52	8.41	8.47	17.42	2.70	2.92	3.83
	M for Black	19.05	18.35	18.12	13.55	12.47	71.95	19.05	18.65	10.99
	SD for Black	6.31	6.45	6.45	8.68	8.66	17.51	2.74	3.08	3.82
	M for Latinx ^a	17.85***	17.01***	17.37**	13.63	13.11*	78.08***	18.76**	19.99***	10.99
	SD for Latinx	6.52	6.99	6.45	8.10	8.46	6.30	2.74	2.65	3.82
	M item score for all Black and Latinx	4.66	4.53	4.47	3.40	3.19	2.84	1.64	1.63	3.66

Notes: M, mother; F, father; LA, learning activities; SS, social skills; INT, internalizing behavior (reversed), EXT, externalizing behavior (reversed).

^aSignificance tests (t-tests) were conducted to compare Black and Latinx parents and children.

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

Mothers' learning activities at Y1, Y3, and Y5 were not associated significantly with SS, INT, or EXT. Fathers' learning activities at Y1 and Y5 were associated significantly with EXT (reversed) only ($r_s = .06, .05, p_s < .05$).

3.4 | Multivariate analyses

3.4.1 | Unconditional models

We estimated an unconditional model of linear growth which included both mother and father learning activities at Y1, Y3, and Y5. The latent outcome variable was not included in this analysis. The model produced a mediocre but acceptable fit to the data, $\chi^2(10) = 259.99, p < .001$; CFI = .91, RMSEA = .08 [90% CI = .07-.09]. The average growth trajectory (Exploratory Analysis 1) was negative for mothers (slope $M = -.46, p < .001$) and fathers (slope $M = -1.71, p < .001$). Levels of fathers' learning activities (intercept $M = 14.27, p < .001$) decreased steadily from Y1 ($M = 13.60$) to Y3 ($M = 12.74$) to Y5 ($M = 10.59$). Mothers' learning activities (intercept $M = 19.22, p < .001$) decreased at a slower rate from Y1 ($M = 18.63$) to Y3 ($M = 18.12$) to Y5 ($M = 17.88$).

3.4.2 | Conditional model

In the conditional model, paths from predictors to the intercept term and slope were estimated, as were paths from the intercept and slope terms to the latent outcome variable, socioemotional skills at Y9. Mother and father paths predicting to socioemotional skills controlled for the effect of the other parent's learning activities intercept and slope. Predictors included mother-father nonresidence at Y1, Latinx parents (Black is reference), family poverty at Y1, and difficult temperament at Y1. The conditional model produced an acceptable fit to the data, $\chi^2(50) = 373.19, p < .001$; CFI = .93, RMSEA = .04 [90% CI = .04-.05].

Consistent with Hypothesis 1, mother's intercept was related negatively to being Latinx ($\beta = -.12, p < .001$) and difficult temperament ($\beta = -.11, p < .001$; see Table 3). Father's intercept was related negatively to nonresidence ($\beta = -.42, p < .001$), family poverty ($\beta = -.13, p < .001$) and difficult temperament ($\beta = -.07, p = .006$). Mothers' and fathers' slopes (see Hypothesis 2) were associated positively with nonresidence ($\beta = .09, p = .008$; $\beta = .41, p < .001$). These findings indicate that when mothers and fathers are nonresident at Y1, there is significantly greater decline in both parents' learning activities from Y1 to Y5.

Mothers' slope was related significantly to father's slope ($B = .96, p < .001$). Hypothesis 3 was not supported. Specifically, paths from mothers' and fathers' intercepts (learning activities at Y1) to socioemotional skills at Y9 were not significant ($\beta = -.03, ns$; $\beta = .07, ns$, respectively, see Table 3). The results of exploratory analysis 2 showed that the path from mothers' slope to socioemotional skills was not significant ($\beta = -.02, ns$), but the association between fathers' slope and socioemotional skills was significant and negative ($\beta = -.18, p < .001$). A negative slope that is related negatively to an outcome suggests that, on average, the trend for lower father learning activities over time was associated with lower socioemotional skills scores at Y9.

3.4.3 | Multigroup analyses

Multigroup (moderation) analyses were conducted to test associations between the intercept and slope and socioemotional skills (Exploratory Analysis 3), among coresiding versus nonresident parents, poor versus non-poor parents, and children with temperaments above the median versus children below the median. Only the multigroup analysis for difficult temperament showed a significant effect on the association between father's slope and child socioemotional skills after applying the Bonferroni correction: $\Delta\chi^2(1) = 25.50, p < .001$. The negative association between father's

TABLE 3 Path coefficients in the conditional latent growth curve model ($N = 3259$)

Path	Estimate	SE	β	p
F Slope \leftarrow M-F nonresident	.63	.18	.41	*
F Icept \leftarrow M-F nonresident	-4.73	.34	-.42	*
M Slope \leftarrow M-F nonresident	.35	.15	.09	.008
M Icept \leftarrow M-F nonresident	-.19	.25	-.02	.482
M Icept \leftarrow Latinx	-1.29	.26	-.12	*
F Icept \leftarrow Latinx	-.32	.28	-.03	.254
M Slope \leftarrow Latinx	.29	.15	.07	.060
F Slope \leftarrow Latinx	.34	.21	.07	.100
F Slope \leftarrow Diff temperament	.04	.02	.19	.033
F Icept \leftarrow Diff temperament	-.11	.04	-.07	.006
M Slope \leftarrow Diff temperament	.02	.02	.04	.306
M Icept \leftarrow Diff temperament	-.14	.03	-.11	*
M Slope \leftarrow Poverty	.02	.15	.01	.873
F Slope \leftarrow Poverty	.26	.13	.17	.049
M Icept \leftarrow Poverty	-.54	.25	-.06	.029
F Icept \leftarrow Poverty	-1.43	.30	-.13	*
M Slope \leftarrow Child sex	.16	.11	.04	.152
F Slope \leftarrow Child sex	.20	.15	.14	.173
M Icept \leftarrow Child sex	.08	.23	.01	.657
F Icept \leftarrow Child sex	-.01	.33	-.00	.545
SES Y9 \leftarrow M Icept	-.17	.12	-.04	.150
SES Y9 \leftarrow M Slope	-.09	.41	-.01	.821
SES Y9 \leftarrow F Icept	.28	.19	.07	.137
SES Y9 \leftarrow F Slope	-5.59	1.27	-.18	.001

Notes: F, father; M, mother; Diff, difficult; Icept, intercept. Latinx reference group is non-Hispanic Black. SES, socioemotional skills; Child sex, child sex at birth. All predictor variables were measured at Y1. Familywise error was adjusted using Bonferroni's correction; alpha levels of .01 or less are significant.

* $p < .001$.

slope and socioemotional skills was significantly greater for difficult children ($\beta = -.08, p < .05$) than for easy children ($\beta = -.07, ns$).

Finally, multigroup analysis was used to determine whether the association between race/ethnicity and the intercepts and slopes varied by poverty and nonresidence status (Exploratory Analysis 4). The association between race/ethnicity and mother's intercept varied significantly for mother-father nonresidence: $\Delta\chi^2(1) = 22.25, p < .001$. Among coresiding mothers, the association between being Latinx and the intercept was significant and negative ($\beta = -.14, p < .001$). Among nonresident mothers, association between being Latinx and the intercept was not significant ($\beta = -.06, ns$).

4 | DISCUSSION

The current study examined urban, low-income Black and Latinx mothers' and fathers' trajectories of engagement in learning activities from infancy to age 5. Our descriptive analyses showed that, on average, teachers perceived the

children in the study to have positive socioemotional skills at age 9, including moderately high cooperation, assertiveness, and self-control, and low internalizing and externalizing behavior. Latinx mothers consistently were less engaged in learning activities than Black mothers, but Latinx fathers were more engaged at Y3 and Y5 than Black fathers. Researchers have found that some Latinx parents read less to their children (one component of our learning activities measure) than other parents because they doubt their ability to support their child's literacy development due to their own limited English proficiency and literacy skills (Jimenez et al., 2020).

Our exploratory analyses showed that, on average, fathers' learning activities decreased significantly and steadily from Y1 to Y5. Although mothers' learning activities also decreased significantly, the rate of decrease was not as steep as that of fathers. It is noteworthy that even though mothers' learning activities decreased over the course of four years, the average level of mothers' learning activities at Y5 was greater than the initial level of fathers' learning activities at Y1. To some degree, mothers' and fathers' engagement in learning activities may decline because children become more independent at the end of the preschool years (e.g., they spend more time playing alone). However, fathers' average decline in learning activities is concerning in light of our findings indicating that the rate of decline is associated with lower socioemotional skills at age 9. The finding that fathers' decrease was larger than mothers might indicate that parents believe the day-to-day activities such as reading to children are mothers' responsibility whereas working is fathers' responsibility (Bianchi et al., 2012), or that as children get older fathers' employment increases to meet the financial needs of the family.

Hypothesis 1 was supported partially. Mother's intercept was related negatively to being Latinx and difficult temperament; father's intercept was related negatively to nonresidence, family poverty, and difficult temperament. Poverty and difficult temperament are significant stressors that may interfere directly with engaging infants in learning activities (Harlam & Burke, 2018; Ryan et al., 2008). For fathers, nonresidence may be associated with low levels of learning activities with infants because men have less day-to-day access to children.

Hypothesis 2 also was supported partially. Mother-father nonresidence at Y1 was associated significantly with steeper declines in learning activities from Y1 to Y5 for both mothers and fathers. Studies have shown that parents often grow further apart from each other when they no longer live together, and when this happens, fathers may have little support from mothers to be engaged with the child (Nelson, 2004). Nonresident fathers also may form new romantic relationships, and studies suggest that fathers' subsequent relationships are associated with decreased involvement with children from previous relationships (McKenry et al., 1996). For mothers, nonresidence may mean having to take care of children's basic needs without the help of a partner, while at the same time having to work to support the family financially. The demands associated with being a single parent may leave little room for engaging in learning activities with children.

Neither mothers' nor fathers' initial level of learning activities at Y1 predicted socioemotional skills at age 9 (see Hypothesis 3). Parents' engagement in learning activities with infants may be a less robust predictor of socioemotional skills than other parenting variables, such as parental supervision and socioemotional support (Longo et al., 2017). It is also possible that assessments of the quality of parents' engagement in learning activities rather than the FFCW frequency measures of learning activities would be better predictors of child outcomes.

The most significant finding of the current study was that higher rates of decline in fathers' learning activities (slope) from Y1 to Y5 predicted lower levels of socioemotional skills at Y9 (Exploratory Analysis 2). This finding builds on the longitudinal research literature by showing that examining the rate of change in fathers' engagement is as important as examining engagement at individual data points (e.g., Taylor et al., 2015). Importantly, the multigroup analyses showed that mother-father nonresidence at Y1 did not moderate the association between fathers' slope and child outcome significantly (Exploratory Analysis 3), suggesting that the association between fathers' decreasing learning activities and child's socioemotional skills was not affected by mother-father living arrangement. It is possible that fathers' and mothers' nonresidence status changed after Y1 and that nonresidential status at later times may affect child outcomes. However, assessments of nonresidence at later times (e.g., Y5) cannot be used to predict the slope in this study which includes learning activities from Y1 to Y5.

A significant finding of the multigroup analyses was that decreasing levels of father engagement in learning activities were associated with lower socioemotional skills when infants had difficult temperaments compared with children who did not have difficult temperaments (Exploratory Analysis 3). Children with difficult temperaments place more demands on parents to assist them in adapting to their environment. Steep declines in fathers' engagement in learning activities may be a manifestation of parents not providing temperamentally challenging children with the tools they need to adapt to the demands of their social environment.

There were a small number of differences among Black and Latinx parents in the current study. Specifically, Latinx mothers who coresided with the biological fathers were less engaged in learning activities than coresiding Black mothers with infants. It is not clear from our data why this difference exists for coresiding parents but not nonresident parents. Perhaps one of the most interesting findings of the paper is that although Latinx mothers are less likely to be engaged in learning activities than Black mothers throughout early childhood, the rate of change in learning activities was not associated with race/ethnicity. This finding may reflect normative changes in parenting associated with children becoming more independent in learning activities (e.g., parents playing less often with children) as they get older.

5 | LIMITATIONS

Mothers' and fathers' learning activities and socioemotional skills were missing a large amount of data which may cause bias in the findings. Missing data were more likely to occur among Latinx parents. The results of the current study may therefore be more applicable to Black parents. Our use of FIML and inclusion of auxiliary variables as strategies to handle missing data help to correct for some potential bias. Another limitation is the FFCW data do not include Spanish speaking parents and therefore may not be representative of all low-income Latinx families in large cities in the United States. In addition, the measures of mothers' and fathers' learning activities were based on self-reports of behavior, which may be subject to social desirability influences. Observational or time diary measures might provide more accurate assessments of parents' involvement with children. Finally, the available parent engagement items in FFCW are measures of frequency of involvement (number of days) with children. Amount of involvement does not mean that parents are engaged in high quality interactions. Number of days playing with children, for example, is not positive if the parent is intrusive, controlling, or demeaning.

6 | CONCLUSIONS

The results of the current study are significant because they show that greater declines in Black and Latinx father engagement in learning activities during early childhood predict lower socioemotional skills at age 9. Less mother engagement in learning activities does not predict socioemotional skills, possibly because mothers' trajectories do not show as steep a decline as do fathers' trajectories. The association between fathers' negative trajectory and lower socioemotional skills was especially pronounced when children had difficult temperaments. Our study has implications for programs serving low-income families. Specifically, practitioners should educate parents to understand that decreasing levels of father engagement in learning activities may have negative ramifications for child outcomes. Programs would be well advised to monitor changes in engagement with children and to provide psychoeducation about the continued benefits of both parents engaging in learning activities with children, even as they enter school. Practitioners also should inquire about and help address any barriers to parent learning activities (e.g., mother-father nonresidence). Practitioners also should be aware that stresses such as difficult child temperament may exacerbate the effects of declining father engagement on children. Supportive services may be especially important for these families to encourage fathers' continued involvement with children.

ACKNOWLEDGMENTS

There has not been any prior dissemination of the findings of this study. The authors of this paper have complied with APA ethical standards in the treatment of the Fragile Families and Child Wellbeing sample. This study was approved by the Temple University Institutional Review Board. Data for this study are available from Princeton University at <https://fragilefamilies.princeton.edu>. Research reported in this publication was supported by the Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health under Award Number R01HD078547 to Natasha Cabrera.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare that are relevant to the content of this article.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Princeton University at <https://fragilefamilies.princeton.edu>.

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How to cite this article: Fagan, J., & Cabrera, N. (2022). Trajectories of low-income mothers' and fathers' engagement in learning activities and child socioemotional skills in middle childhood. *Social Development*, 1–18. <https://doi.org/10.1111/sode.12647>