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RACE/ETHNICITY, HUMAN CAPITAL, AND THE SELECTION OF YOUNG CHILDREN INTO EARLY CHILDHOOD EDUCATION

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Abstract

Mexican-origin families face complex ethnic and immigration-based barriers to enrollment in early childhood education programs. As such, reducing barriers to enrollment for this population requires a better understanding of how Mexican-origin families work with, against, or around both general and group-specific constraints on educational opportunities. Using the Early Childhood Longitudinal Study–Birth Cohort, this study tailored broad social theory to the experience of Mexican-origin families to examine associations between human capital considerations and early childhood education enrollment within this population. Results supported the hypothesis that human capital considerations would be associated with early childhood care and education and provide limited evidence for the expectation that this link would be stronger for Mexican-origin families.

Keywords

early childhood education; accommodations framework; Mexican-origin; human capital

1. Introduction

Current disparities in early childhood education enrollment forecast future disparities in educational attainment, suggesting that the rapid expansion of early childhood education over the last two and a half decades is not realizing equity in educational opportunity (Campbell et al. 2002; Fram and Kim 2008; Phillips et al. 2017). As such, there is a need to understand why some segments of the population are underrepresented in early childhood education. One such group that is large and fast-growing is Mexican-origin families, who face practical obstacles to enrolling children in early childhood education (e.g. financial constraints, limited market supply) but also more complex barriers related to segregation and discrimination in a climate of ethnic and immigration-based hostility (Flores 2014; Rumbaut and Portes 2001; Telles and Ortiz 2008). As such, they are a population that deserves targeted research and policy attention. Reducing barriers to enrollment for this population

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requires a better understanding of how Mexican-origin families work with, against, or around both general and group-specific constraints on educational opportunity. This study, therefore, investigates what helps Mexican-origin families break through systemic barriers to access early childhood education for their children.

To do so, we examine a key resource with a long sociological tradition, human capital, which reflects the value that people bring to a situation or group based on the skills and experiences they have accrued (Becker 1993) and tailor the broad social theory of human capital to the experience of Mexican-origin families. We highlight what we refer to as *human capital considerations* by investigating connections between mothers' own human capital (i.e., educational attainment), their perceptions of how to develop the human capital of their children (i.e., early care and education preferences and educational expectations), and children's own academic skills (i.e., early mental and motor skills), and early childhood education enrollment for Mexican-origin families. Notably, we compare these associations to non-Latinx white (white) families, traditionally the most advantaged racial/ethnic group in the U.S., and to non-Latinx Black (Black) families, a group that historically has been disadvantaged but also has a long history of engagement with the early childhood education market. The basic hypotheses—that various human capital considerations will additively and interactively predict children's early educational enrollment above and beyond family, community, and state contexts, but especially for children in Mexican-origin families—will be tested with data from the Early Childhood Longitudinal Study–Birth Cohort (ECLS-B).

1.1 Accommodations, Constraints, and the Early Education of Mexican-Origin Children

Mexican-origin families are a socially and demographically meaningful group. Their children are one of the fastest growing groups in the U.S. and one of the most disadvantaged in terms of educational challenges (Johnson and Lichter 2010; Turney and Kao, 2009). Relative to other racial/ethnic minority groups, Mexican-origin families have higher levels of socioeconomic disadvantage, higher-than-average poverty rates, and lower-than-average rates of parental educational attainment (Hernandez 2004). Moreover, they are more likely than many other socioeconomically disadvantaged groups to face challenges to social mobility related to recent migration histories (e.g., language barriers, lack of familiarity with and access to U.S. institutions, mixed status families). Caught in the cross-hairs of fierce political debate in recent years, they also face ethnic-, immigration-, and language-related discrimination (Adair 2012). Despite a wealth of cultural and community resources (e.g., strong social networks, two-parent family structures, etc.), these widespread challenges and risks conspire to undermine the educational prospects of Mexican-origin children (Lopez, Grindal, Zanoni, and Goerge 2017).

Mexican-origin children, therefore, may derive heightened benefits from early childhood education programs because when children from Mexican-origin families (as well as Latinx families) do enroll, they demonstrate greater learning gains than their peers (Author 2007; Gormley 2008, Magnuson, Lahaie, and Waldfogel, 2006). The concern, though, is that Mexican-origin children do not enroll in early childhood education programs at the same rate as those peers (Author 2016; Karoly and Gonzalez 2011). These potentially consequential disparities in enrollment arise in part because inequality blocks access to

early educational opportunities in this population. Mexican-origin families tend to live in areas with a lower supply of programs and have lower financial means to pay for private programs when public options are unavailable (Author 2018; Karoly and Gonzalez 2011). In addition, unwelcoming or discriminatory program personnel, disconnection from networks with information about the early childhood education market or educational system more broadly, and language mismatch are all unique barriers these families may confront when accessing the private and public options that are theoretically available (Author 2016; Fuller 2007; Karoly and Gonzalez 2011; Tobin, Adair, and Arzubiaga 2013). These considerations set Mexican-origin families apart from other families from other countries of origin and clarifying trends among this population contributes to the emerging literature regarding the selection into early childhood education among families with non-native parents (Kahn and Greenberg 2010).

Establishing how social obstacles and constraints reduce the exposure of young children from Mexican-origin families to potentially beneficial early childhood programs is clearly an important task if the contemporary expansion of early childhood education in the U.S. is to reduce long-term educational inequalities. All Mexican-origin families, however, will not necessarily navigate these external obstacles in the same way. In fact, because they have been migrating to and settling in the U.S. for decades, Mexican-origin families are one of the most heterogeneous immigrant-origin groups in the country (Alba, Jiménez, and Marrow 2014). Exploring heterogeneity within the population of Mexican-origin families, therefore, is critical to understanding how they navigate an unequal system.

One way to explore heterogeneity is to consider what household resources Mexican-origin families can draw on to enroll their children in early childhood education in the face of external obstacles and constraints. Meyers and Jordan (2006) designed the accommodations framework for this very purpose. As a theoretical model, the accommodations framework highlights the channels into and out of early childhood education across four domains: Family and employment circumstances, social and institutional systems, cultural contexts, and socially stratified resources. This framework and associated studies (Coley Votruba-Drzal, Collins, and Miller 2014; Author. 2016) demonstrate how parents reconcile their own needs for child care with broader social factors, such as economic resources and the availability of information regarding viable local options, that make it harder or easier to meet these needs. Sociological perspectives on cultural diversity among families with children (Burton 2007; Lareau 2011) suggest the need to contextualize this accommodations framework within the system of inequality among major population groups. For example, stratification based on race/ethnicity and immigration shape how pathways into and away from early childhood education play out, both facilitating pathways for some families and blunting them for others.

1.2. Human Capital as a Key Component of the Accommodations Framework

One value of the accommodations framework is its breadth, as it identifies a wide array of pathways into and away from early childhood education. This breadth, however, often leads to a shallower understanding of any one pathway. Family human capital, for example, often empirically emerges as a key component of the framework (Coley et al. 2014).

Although human capital refers to the entire set of skills, practices, and knowledge that a family possesses as a result of investments into their cognition, education, and training, it is usually measured narrowly (primarily as maternal education) and is incorporated into analyses as one of dozens of factors (Becker 1993; Author. 2016). Truly understanding how early childhood education is related to human capital, however, necessitates tailoring accommodation theories according to specific developmental stages (e.g. early childhood education) and by population characteristics (e.g. race/ethnicity).

To represent the often obscured processes of human capital formation and maintenance within a family, we examine three dimensions that come together here under our label of human capital considerations (Akerlof and Kranton 2010; Becker 1993; Ployhart and Moliterno 2011). These three dimensions include: 1) parental human capital (i.e., maternal educational attainment); 2) children's potential future human capital (i.e., pre-academic cognitive and motor skills); and 3) parental scaffolding of children's human capital development (i.e., desiring educational settings for children's care and maintaining high educational expectations).

First, maternal educational attainment is the classic and most common conceptualization of human capital in the accommodations framework (Fuller, Holloway, Rambaud, and Eggers-Pierola 1996). Broadly, *parental human capital* brings economic and other returns to parents that can boost the social mobility of children by enabling parents to more effectively manage and realize opportunities—educational and otherwise—for children (Attewell, Lavin, Domina, and Levey, 2007; Becker 1993; Davis-Kean 2005; Domina and Roska 2012). When considering parental management of early childhood education, and holding income constant, mothers' human capital tends to be more important than fathers' human capital (Greenberg 2011). Indeed, the advantages the children of more educated mothers have prior to school entry, in part, reflect how education enhances both the financial resources and "soft skills" mothers use to navigate the complex early childhood care market (Author 2009; Davis-Kean 2005; Lareau 2011).

Second, human capital is not just a currently held asset but also a potential resource that one could develop in the future. Intergenerational family-based human capital, therefore, couples attention to parents' educational attainment with "signals" that children may send to parents about their *potential future human capital* that guide adults' investments in educational opportunities. Well- or poorly-developed pre-academic skills or motor skills might elicit either advantage-gaining or disadvantage-closing investments from adults (Ceci and Papierno 2005; Lareau 2011; Pomerantz 2007). The former occur when parents and educators give already exceptional students additional educational opportunities, and the latter when adults seek to minimize any achievement gaps among the most at-risk children and their peers (Augustine 2014; Bell 1970; Belsky 1984; Domina 2005; Grogan, 2012).

Third, parents' outlook on whether and how children's human capital can be realized constitutes *parental scaffolding of children's human capital development.* This consideration encompasses what parents want for the future and their own ideas about how to support that desired future (Grogan 2012). Mothers of all educational backgrounds approach their children's present and future educational opportunities in both abstract and concrete terms,

from figuring out what they want and hope for children someday to figuring out steps they can take right now (Hoover-Dempsey 1997; Kalil, Ryan, and Corey 2012). For example, a parent may establish college-going as an ultimate goal for even a very young child and then try to discern what can be done foundationally (such as finding a specific kind of educational environment for a young child) to increase the odds that goal will eventually be met.

For most white families and for many Black families (especially because of Head Start and similar programs), early childhood education is normative and, thus, parents are likely to enroll their children regardless of variation in human capital. For Mexican-origin families, however, human capital considerations may have outsized influence in the decision to enroll children in early childhood education (Author 2010). Mexican-origin mothers, for example, face many obstacles in gaining educational opportunities, including economic challenges, social networks, linguistic barriers, and prior history (or lack thereof) with the education system and its agents, so increases in educational attainment may be more empowering for them than other women (Author. 2016). For Mexican-origin families who face significant barriers to participation in the educational system, differences among their children in perceived skills and needs might also influence enrollment for them more so than white or Black families. Some evidence suggests that enrolling children in early childhood education as a form of enrichment may be especially pronounced for Mexican-origin families, particularly recent immigrants (and Author 2016). Because Mexican-origin mothers tend to have higher educational expectations for their children than other mothers, reflecting a strong belief in the power of education to make a difference in their children's lives (Hardie 2015; Yamamoto and Holloway 2010), high educational expectations and a desire for educational enrichment could matter more for their children's early childhood education enrollment than among other mothers who face less pronounced challenges.

Of course, combinations of these human capital considerations could also matter for early childhood education enrollment, not just each individually. For instance, more educated mothers may be better able to identify their children's skill levels, understand what they mean, and figure out how to support them (Author 2015; Coley et al. 2014; Fuller et al. 1996; Greenberg 2011; Morrissey 2008). As another example, although women across the educational distribution engage in educational scaffolding, those with more education may be able to use their sense of how to navigate the U.S. educational system—and other advantages—to make their scaffolding count for early childhood education enrollment (Coley et al. 2014; Englund et al. 2004; Kodde and Ritzen 1988; Neuenschwander et al. 2007). If each individual consideration has heightened benefits for Mexican-origin families, then so too might the interplay among them.

1.3. Aims and Hypotheses

This study applies the accommodations framework and human capital considerations to investigate the factors that influence Mexican-origin families' decisions to enroll, or not, their children in early childhood education programs. In doing so we make two specially selected comparisons. One is to white families, who historically have been the dominant group in the early childhood education market; who, in aggregate, have more financial resources to navigate private early childhood education; and who do not face the kinds

of differential treatment within the educational system that racial/ethnic minority groups do. The second is to Blacks families, who are another large minority group that shares some similar experiences of marginalization within the educational system as Mexican-origin families; who, overall, confront less language- and immigration-based discrimination than such families; and historically has had high rates of enrollment of children in early childhood education (Zigler and Muenchow 1992).

This approach leads to two hypotheses:

1. The three types of human capital considerations will be additively associated with higher odds of children's enrollment in early childhood education above and beyond important elements of the family, community, and state context, particularly for children in Mexican-origin families.
2. The different types of human capital considerations will interact multiplicatively, such that increasing levels of human capital considerations will reinforce one another. These human capital interactions will be especially influential for racial/ethnic minority families to further increase the odds of enrollment in early childhood education above and beyond the contextual factors, particularly for children in Mexican-origin families.

2. Methods

2.1. Data and Sample

Collected by the National Center for Education Statistics (NCES), ECLS-B is a nationally representative sample of approximately 10,700 children born in the United States in 2001. Interviews with parents (in the language of their choice) and child assessments occurred when children were 9 months, 2 years, and 4 years old and when they entered kindergarten (in 2006 or 2007), with other data collections (e.g., caregiver interviews, child care assessments) at various waves. About 8,900 respondents had a valid sampling weight for the first three waves to correct for the sample design and differential attrition of families from the sample across waves, and the analytical sample used here included all Mexican-origin, Black, and white families with such weights ($n = 6{,}400$; sample sizes rounded to nearest 50 to comply with NCES regulations).

2.2. Measurement

Early care and education enrollment.—A three-category variable representing early care and education was constructed from a series of questions about parents' primary means of child care at the 4-year wave. This variable identified children enrolled in any early childhood education programs (center care, preschool, prekindergarten, or Head Start), those in other non-parental early childhood care arrangements (e.g., informal care like relative care, non-relative care, or group/family care), and those in only parent care. Children with multiple care arrangements were assigned the primary type of care, which corresponds to the type of care where they spent the most hours. As part of a sensitivity analysis, we also constructed a variable that split those enrolled in center care and those in Head Start into two

separate categories, and these models produced comparable results (results available upon request).

Race/ethnicity.—Data on race/ethnicity and Hispanic identification were derived from children's birth certificates and parent reports from the first wave of data collection. We used these data to identify Mexican-origin Latinx, non-Latinx white, and non-Latinx Black families in the study sample. A separate indicator for household immigrant status is included in models, given the centrality of immigrant status for early childhood education enrollment (Miller, Votruba-Drzal, and Coley 2013).

Human capital considerations.—To operationalize adults' accumulated human capital, a categorical variable measured mothers' level of education at the first wave (less than high school diploma, high school degree or equivalent, vocational/technical education, and bachelor's degree or higher). We constructed two measures of children's potential future human capital: children's early pre-academic skills and motor skills. The NCES constructed an assessment of children's mental capabilities at age 2 (second wave) based on the Bayley Short Form-Research Edition (BSF-R; National Center for Educational Statistics, 2017). This assessment covered early language, vocabulary, and problem solving, among other pre-academic skills, and was scored on a standardized scale—roughly ranging from 15 to 89—that allowed direct comparison among children. NCES also adapted the BSF-R for an assessment of children's motor skills, such as eye-hand coordination, skillful walking, and balance. These wave 2 variables preserve any causal ordering between a child manifesting skills and a parent subsequently enrolling that child in an early childhood education program at wave 4.

Three binary variables measured parental scaffolding of children's human capital development. Two of these variables capture mothers' preferences for early care. The ECLS-B asked mothers a series of questions regarding preferences for child care at wave 4. Two of these questions tapped into aspects of child care that are related to parental scaffolding of children's human capital development. The first indicated whether mothers considered the preparation of their child for kindergarten as a very important aspect of an early care arrangement (rather than somewhat or not too important), the second whether mothers considered a small "class" size to be very important child care characteristic, and the third whether mothers stated that their educational expectation for their children was to eventually graduate from a four-year college or higher (versus attaining a lower degree). These measures were from the third wave and reflect prior accommodations work with ECLS-B (Coley et al. 2014; Author. 2016).

Family, community, and state contexts.—The accommodations framework encourages consideration of the broader social systems in which children are situated, recognizing that children's enrollment in early childhood education is not simply an indicator of their parents' values but also reflect the opportunity structures they face. This recognition is especially important when studying racial/ethnic minority parents who shoulder the blame for educational disparities among children but may in fact be experiencing certain contexts that do not allow them to match their intentions with viable options (Coley et al. 2014; Author. 2016; Furstenberg 1999; Gordon and Chase-Lansdale

2001; Morrissey 2008). Consequently, this examination of links among human capital considerations and selection into early childhood education also takes into account control variables that capture three concentric levels of context, from the more micro-level to the more macro-level.

First, *family contexts* that can influence both the human capital considerations and early childhood education enrollment encompass household characteristics and the individual characteristics of family members. Such controls, measured at the same time as early childhood education enrollment (age 4), include a binary marker for maternal access to flexible work schedules, a binary marker of whether the family fell below 185% of the federal poverty line for its household size, a continuous measure of the age of the mother at the child's birth, a binary marker of child gender, and a binary marker of whether the child was born at a low birth weight. Models also include a categorical variable combining household structure and employment treated as a series of indicator variables using the "i." function in Stata: two parents both employed (the reference), two parents with paternal employment alone, two parents with maternal employment alone, two parents both unemployed, two parents with work NA, one parent employed, one parent not employed, other family structure employed, and other family structure unemployed.

Second, *community contexts* can cover a wide array of neighborhood social and economic conditions as well specific conditions tapping into the local early child care market for families (Gordon and Chase-Lansdale 2001). Such control variables include three county-level variables from the U.S. Census: 1) percent of individuals in the county with some college education (derived from the 2000 decennial Census), 2) the number of child care establishments in the county, and 3) the average salary of a child care worker in the county (both derived from the 2003 Census Business Patterns). Children were matched to their age 4 county characteristics.

Third, *state-level contexts* span many potential measures, but the focus of this study is on early child care policies influencing supply and demand. To account for these macro-level influences on selection into early childhood education programs, this study used control variables based on data from the National Child Care Information Center, U.S. Department of Health and Human Services, and the U.S. Census (Rigby, Ryan, and Brooks-Gunn 2007), including a scaled score for the amount of child care subsidies paid in the state (−2.70–2.77), a scale score for the amount of regulation in the early childhood education market in the state (−3.33– 2.96), a scale representing the taxes that go to early childhood education (−.60 to 3.2) the eligibility threshold for a family of three to receive a subsidy for early childhood 14 ($education,427.63-$47925.51), the number of preservice and inservice training hours required for facilitators (0–190 and 0–40, respectively), the threshold for the total number of children permitted in a care facility before licensing is required (1–13), and an indication of how many such licensing tiers exist in a state (1– 5). All of these variables reflected conditions in 2002.

2.3. Plan of Analysis

To address the first hypothesis of this study about the independent role of human capital considerations in early childhood education, multinomial logistic regressions predicted the

odds that children were enrolled in early childhood education programs (i.e., center care, preschool, prekindergarten, Head Start) or other non-parental early child care as compared with sole parental care at age 4. These models, which utilize all the information contained within the dependent variable to produce efficient estimates (Greene 2003) included the full set of covariates, the race/ethnicity variables, and the human capital variables, and eventually the interactions between race/ethnicity and human capital variables. To address the second hypothesis regarding the multiplicative role of human capital considerations in early childhood education, we extend the above models to include two-way interactions among the various human capital variables and then three-way interactions among each of these two-way interactions and race/ethnicity.

All analyses were conducted in Stata 14.0 (Stata Corp 2009). To maximize available information and minimize bias, the *mi estimate* suite of commands in Stata imputed missing data across ten datasets. Moreover, longitudinal weights were used to create a nationally representative sample and account for differential attrition from the sample across waves. The *svy* settings in Stata draw on NCES provided survey weights which clustered families at the strata level, comprised of a county or contiguous counties (NCES 2019). This modeling strategy allows for the inclusion of person-level weights, which models that explicitly cluster at the county level would not permit. Even so, models with county-level clustering did not return results that could significantly alter the conclusions we present. A more conservative strategy, modeling county-level fixed effects, required counties with fewer than ten observations to be dropped from the analysis and reduced the sample size by approximately 1,750 observations. These fixed effects models also did not return results that change the conclusions we present, although they lacked any significant three-way interactions. Differences are noted when present in the results section, and alternative model results are available upon request.

3. Results

Table 1 contains the descriptive statistics for all variables broken down by race/ethnicity. On the surface, these descriptive statistics validate previous research reporting racial/ethnic disparities in early childhood care and education enrollment and family human capital. Mexican-origin children are nearly 20 percentage points less likely to enroll in early childhood education than their Black and white peers. Mexican-origin families also have lower levels of maternal educational attainment and their children score lower on mental and motor assessments. The proportion of Mexican-origin families, in contrast, that favor small class sizes and kindergarten preparation and the proportion who expect their children to graduate college are between 2 and 8 percentage points higher than the other racial/ethnic groups (with the exception of Black families reporting the strongest preference for programs that prepare children for kindergarten). These descriptive statistics mirror previous research on high educational expectations among Mexican-origin families despite lower socioeconomic resources (Turney and Kao,2012).

Descriptive statistics also reveal differences in family circumstances by race/ethnicity. For the 1,150 Mexican-origin families, 60 percent report at least one parent with another country of origin, whereas only 9 percent of the 1,350 Black families and 6 percent of the 3,900

white families report the same. Both Mexican-origin and Black families experience higher levels of poverty compared to white families, and mothers in minority families are also slightly younger, on average, at the birth of their first child. On the other hand, community and state characteristics appear to indicate that Mexican-origin families may be slightly advantaged in regards to the child care market, with the highest average number of child care centers, high scale scores for subsidies, regulation, and taxes, as well as required preservice training for childcare workers.

3.1. Human Capital Considerations: Mechanism of Selection into Early Childhood Education

The first hypothesis of this study is that human capital considerations will be associated with higher odds of enrollment in early childhood education, especially among children from Mexican-origin families. To begin, we describe the basic racial/ethnic patterns in early childhood education in Table 2. Model 1 represents the baseline models predicting children's enrollment in early childhood education or other non-parental care, both relative to parental care. Net of human capital factors and the full set of family, community, and state covariates, exponentiating the coefficient in Table 2 indicates a 58% reduction in the probability of enrollment in early childhood education (vs. sole parental care) for Mexican-origin children as compared to white children. Black children show the opposite pattern, with a 38% increase in the predicted probability of such enrollment compared to white children. These two results are mirrored in models with county-clustered standard errors, but the coefficient for Black families is no longer significant when models include county-level fixed effects. Rotating the reference category for race/ethnicity reveals that the difference between Mexican-origin and Black children is also significant. Racial/ethnic differences in other kinds of non-parental care (vs. parental care) are less distinct.

When accounting for race/ethnicity, several components of human capital considerations are associated with changes in the predicted probability of early childhood education enrollment in general, indicating potential support for our first hypothesis. First, compared to women with less than high school education, those with a high school diploma experience a 38% increase in their predicted probability of enrolling children in early childhood education, whereas those with a college education or higher experience an increase of 370% (note that maternal education does not differentiate parental vs. non-parental care). Second, a one point increase on the standardized motor skills assessment is associated with a 1% increase in the predicted probability of enrollment in early childhood education over parental care. Also of note is the negative coefficient for pre-academic skills predicting non-parental care over parental care. This pattern suggests that parents might view children with more developed skills as not requiring additional care outside of the home. Third, parents' expression of a preference for a small class size is associated with a reduction in children's predicted probability of enrollment in early childhood education compared to parent care by 26%. Parents expressing a preference for a care arrangement with an educational component is also associated with an increase in a child's predicted probability of enrollment compared to parent care of 278% (note: no variable tapping this dimension of human capital considerations differentiates parental and non-parental care).

To evaluate whether these human capital considerations are more prominent for early childhood education enrollment among Mexican-origin families, we iteratively add two-way interactions between the race/ethnicity indicators and each human capital factor. Model 2 in Table 2 displays results for the only significant two-way interaction between adult's accumulated human capital and race/ethnicity that could indicate a greater salience of human capital considerations for Mexican-origin families. No other two-way interactions were significant. Note that the coefficients for the race/ethnicity variables are no longer significant, indicating that among those with less than high school education (the reference group), race/ethnicity does not significantly influence the predicted probabilities of enrollment in early childhood education over solely parental care.[1]

The interpretation of the interaction for Black families and mothers having a B.A. degree or higher, however, aids in fine-tuning our evaluation of the hypothesis. Figure 1 displays the interaction graphed in terms of predicted probabilities of enrollment in early childhood education (vs. sole parental care) for white, Black, and Mexican-origin families at different levels of educational attainment, with all other model variables at their means. It shows that the positive association between maternal human capital and children's enrollment in early childhood education reported for the full sample is muted among Black families. Increases in the predicted probability of enrollment as a function of maternal education are more pronounced among Mexican-origin and white mothers, who do not differ significantly from each other (as determined by rotating the reference category for race/ethnicity and re-estimating the model). When taken together, these results indicate support for the first hypothesis that human capital considerations do matter for the selection of children into early childhood education programs, with some indication that they may matter more for Mexican-origin families than other families.

The second hypothesis concerns interactions among the different components of human capital considerations in predicting early childhood education enrollment and whether these multiplicative associations are stronger for Mexican-origin families than non-Mexican families. Models with county-level clustering returned several additional significant three-way interactions that are not presented here (available upon request). For models with county-level fixed effects, none of these three-way interactions were significant. Results for models with a person and strata-level weight similarly reveal no significant interactions among any human capital variables until accounting for racial/ethnic variation. One such three-way interaction is statistically significant (see Table 3): A negative coefficient for Mexican-origin x maternal expectation of a child attending college x children's pre-academic skills. We graph predicted probabilities of enrollment to facilitate interpretation in Figure 2.

Across all three racial/ethnic groups, children whose mothers expect them to graduate college and who display weaker pre-academic skills have a higher probability of early childhood education enrollment, suggesting universal compensation. Yet, the interplay of children's pre-academic skills and such enrollment varies across racial/ethnic groups when

[1]This significant interaction is not present in models without person-level weights that explicitly cluster at the county, nor in models with county-level fixed effects.

mothers do not expect their children to attend college one day. For families that are white, children with less developed pre-academic skills have a higher predicted probability of early childhood education enrollment than those with more developed pre-academic skills, suggesting an even stronger compensatory effect. When Black mothers have low expectations, however, it is children with more developed pre-academic skills that have the highest probability of enrollment. For Mexican-origin families, neither differences in maternal expectations nor children's pre-academic skills seem to influence the probability of selection into early childhood education. This pattern indicates that the statistically significant interaction is a signal for a dampened main effect in this group.

Taken together, these results provide limited evidence for hypothesized racial/ethnic variation in the independent or interactive links between human capital considerations and early childhood care and education. Instead, results reveal similarities between Mexican-origin families on one hand and Black and White families on the other, which mirrors prior research on immigrant families in general (Kahn and Greenberg 2010).

4. Discussion

This study extended the accommodations framework by situating parents' early child care and education decisions in a demonstrably unbalanced cultural system that constrains access to the quantity and quality of options (Meyers and Jordan, 2006). By focusing on Mexican-origin families who experience unique social situations within which accommodation processes converge, this study was able to highlight demographically and culturally meaningful patterns of selection of children into early child care and education arrangements varying in their educational focus and benefits. Expanding human capital into a multi-layered family system (the human capital of mothers, the potential that their children show to develop it in the future, and how parents scaffold children's human capital development), this study further emphasized the resources that might support early childhood education enrollment. Below, we review the findings for each of the hypothesis, discuss the broader implications that can be gleaned from these findings, and conclude with an argument for the value of studying the differential selection of children into early childhood care and education.

To summarize, the results of this study supported the hypothesis that human capital considerations would be associated with early childhood care and education, with limited support for the expectation that this link would be stronger for Mexican-origin families. That limited evidence of heightened sensitivity to maternal education was only in comparison to Black families, not white families. Analysis of the interactions between human capital considerations and race/ethnicity revealed little support for the second hypothesis about the interactive interplay of human capital considerations across diverse groups. When taken together, these findings have implications for the development of the accommodations framework, for the understanding of race/ethnicity as a context of education more broadly, and some policy implications for making universal enrollment a reality in the U.S.

Through building theory around the accommodations framework, we demonstrate that family decision-making processes are not simply the outcome of the sum of a discrete

number of variables but rather a more complex system in which one family characteristic may shape the expression of other characteristics in children's early childhood education enrollment. For example, maternal education appeared to matter more for the early childhood education enrollment of white and Mexican-origin families than Black families. As another example, among mothers who did not expect their children to graduate college, more developed pre-academic skills appeared to select children from Black families into early childhood education, whereas less developed pre-academic skills appeared to matter more for children in White families, with Mexican-origin families displaying little association between pre-academic skills and enrollment. The take-away message for theory is that the implications of each individual component of the accommodations framework for family decision-making might vary according to contextual factors. The accommodations framework, however, extends beyond family human capital and includes many other factors that this study treated only as controls: child care markets, communities, and state-wide policies. Future research can unpack the degree to which these contexts might also moderate the role of human capital considerations in early childhood care and education—including differentially by race/ethnicity.

By conceptualizing race/ethnicity not merely as an accommodations process itself (i.e., a predictor of early childhood education enrollment) but also as a context of converging accommodations processes (i.e., a moderator of links between an accommodations process and enrollment), this study suggests that commonly studied resources do not have set value but instead need to be understood within group-specific experiences. A resource may be of more or less value to some families depending on the overall abundance of resources available to them or the degree to which opportunity structures are open to them and embedding resources in systems of inequality is theoretically important. Consider the special impact of a strong academic mentor for Black men, or that after school programs might be most valuable for children on the margins (Ellington and Frederick 2010; Nelson 2017). Although similarities outweigh differences in this case, the patterns in this study still revealed that human capital considerations could operate differently within different racial/ethnic contexts.

This knowledge has policy relevance. For example, our findings suggest that children of Mexican-origin mothers might derive equal benefit from maternal education for early childhood education enrollment as the children of white mothers. This finding emerges despite the potential qualitative differences in maternal educational attainment for Mexican-origin mothers, who may have received at least a portion of their education in Mexico, and those mothers who completed schooling solely in the United States (Author. 2016). The lower levels of maternal educational attainment for Mexican-origin mothers overall, therefore, might play a role in their children's under-enrollment in early childhood education programs, regardless of where they completed their education. Thus, programs targeted towards increasing the educational attainment of Mexican-origin women might have an added benefit of increasing early childhood education enrollment for their present or future children (Sabol et al. 2015). As this discussion indicates, closer attention to the contexts of maternal human capital development could provide insight as to whether programs that are geared towards increasing educational attainment among Mexican-origin mothers would be

more beneficial for early childhood education enrollment should they be implemented in the U.S. and/or in Mexico.

These themes are suggestive not conclusive. They call for more inquiry, including studies that address the limitations of what we have done here. One limitation of this study is that we did not investigate the underlying processes linking human capital considerations to enrollment in early childhood care and education (overall and within groups). What is needed is information on the intermediary step between, for example, children having some kind of skill and parents recognizing that skill and making decisions accordingly. Such measures, not present in the ECLS-B, may tap into the processes involved when parents navigate contexts for human capital development within constrained markets or practical concerns. Similarly, just as race/ethnicity is an important context within which to consider family decision-making, other factors such as national origin, family gender dynamics, or neighborhood settings might also influence the expression of human capital considerations in early childhood care and education enrollment. Qualitative data collection could help to illuminate the kinds of questions future researchers might want to collect in nationally representative surveys like the ECLS-B. Similarly, the next step in understanding race/ethnicity as a key analytical context, is to incorporate more fully the heterogenous experiences of individuals defined by our racial/ethnic categories (Irizarry 2015). Specifically, by investigating variability within racial/ethnic groups we can better understand how certain family characteristics influence selection into early childhood programs.

Exploring such future avenues and addressing such limitations is important. This line of work can show that the long-recognized phenomenon by which a lack of resources and opportunities can undercut high educational expectations and values (e.g., McNeal 1999; Mickelson 1990) starts very early in the educational lives of children and in the careers of parents as educational shepherds. More generally, it speaks to the value of incorporating developmental models into research on children's educational trajectories, models that situate those trajectories within a series of nested ecologies—child (as an independent actor and driving force) within family, within community, within larger social structures (Bronfenbrenner and Morris 1998; Lerner 2006). Turning to policy, calls for expansion of early childhood education coupled with the oft-cited econometric evidence of the returns to such investment (e.g., Heckman 2006) increase the need for research that identifies the predictors of early childhood care and education enrollment, not just its consequences. We need to know more about why some children utilize early educational opportunities and others do not, and then use that knowledge to promote more equity in the system.

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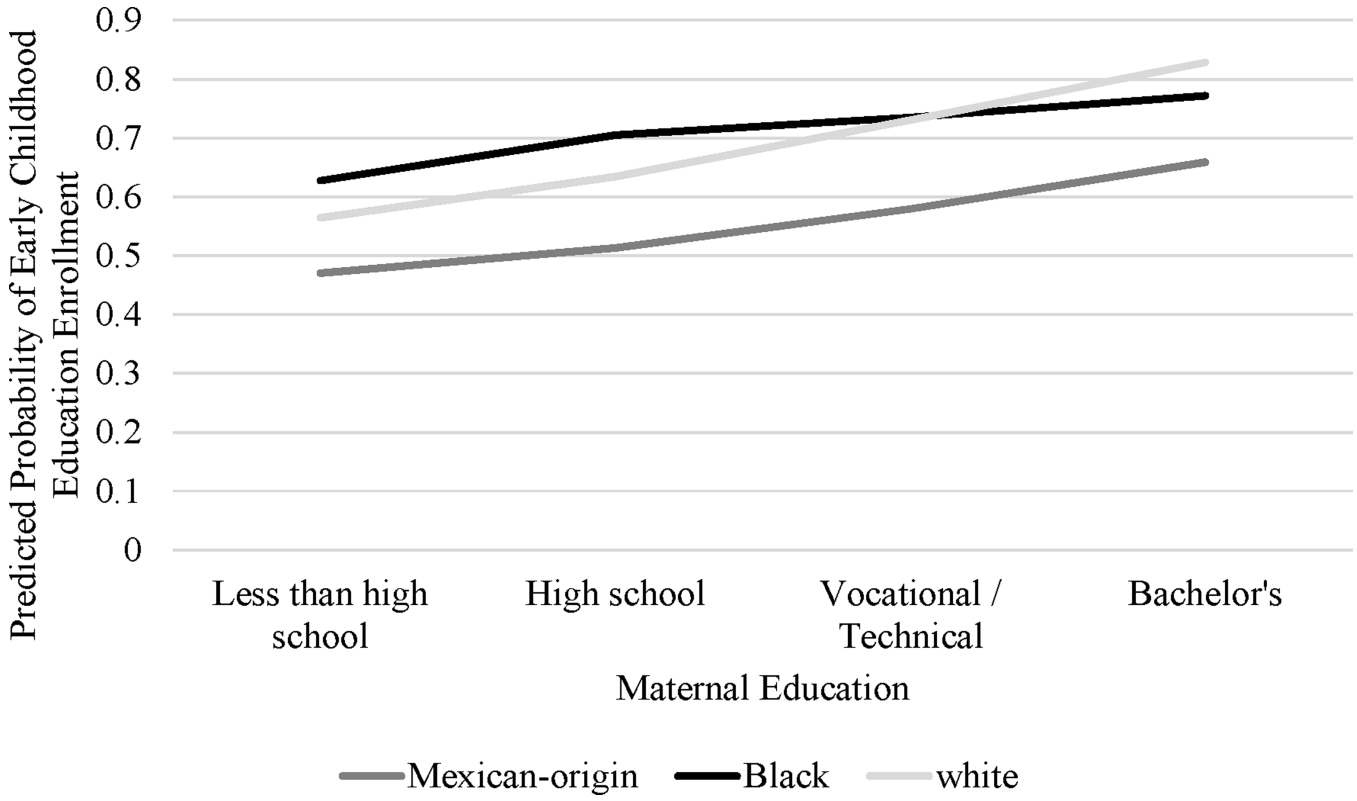

Figure 1.
Predicted Probabilities of Children being in Early Childhood Education, by Maternal Human Capital and Race/Ethnicity

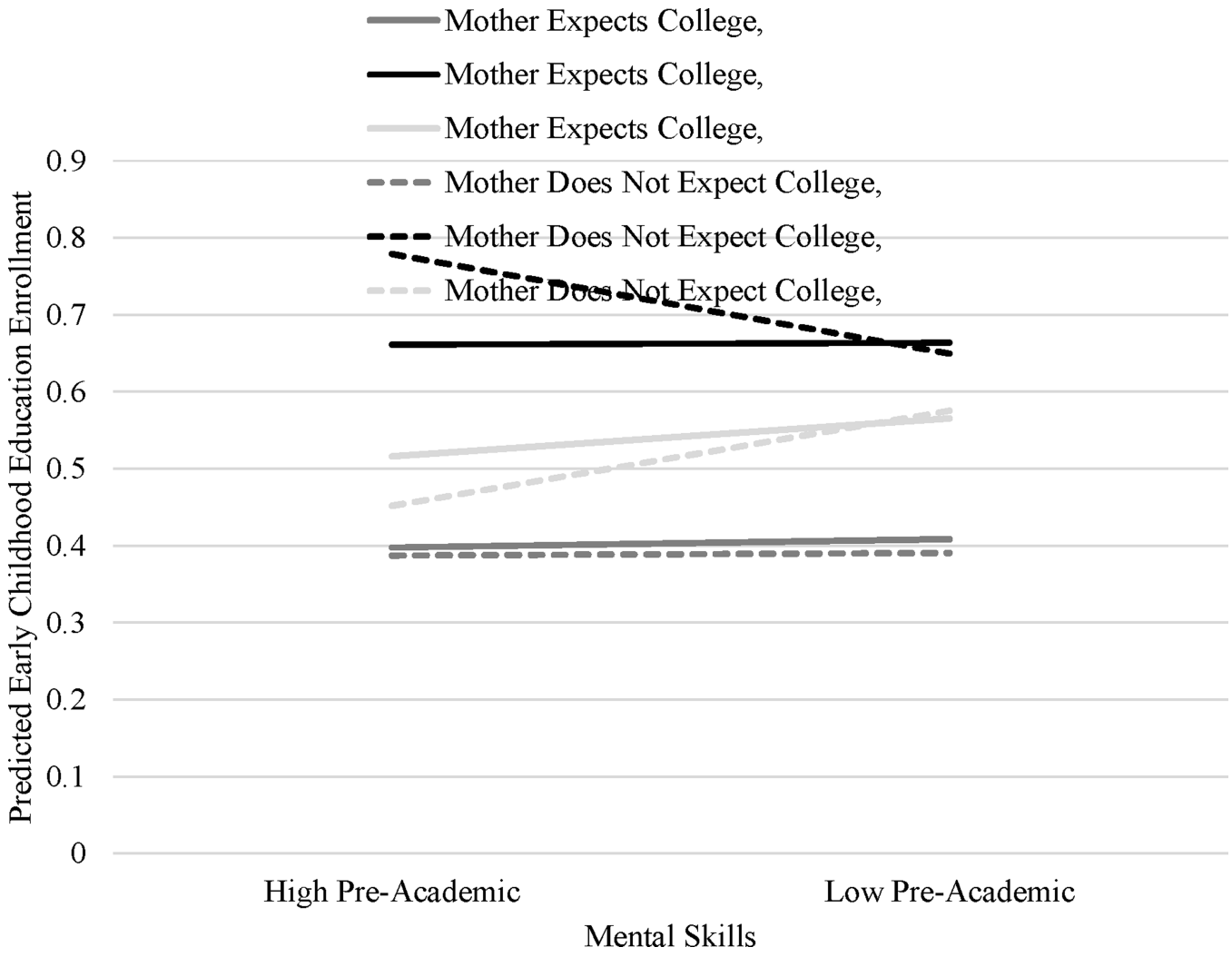

Figure 2.
Predicted Probability of Enrollment in Early Childhood Education, by Parents' Educational Expectations, Children's Pre-Academic Skills, and Race/Ethnicity

Table 1.

Descriptive Statistics by Race/Ethnicity

	Mexican-origin			Black			White		
	n	***M***	***SD***	***N***	***M***	***SD***	***n***	***M***	***SD***
Early Care and Education									
Early childhood education	1,150	0.55	0.50	1,350	0.74	0.44	3,900	0.73	0.45
Non-parental care	1,150	0.15	0.36	1,350	0.11	0.31	3,900	0.10	0.29
Parental care	1,150	0.30	0.46	1,350	0.15	0.36	3,900	0.18	0.38
Human Capital Considerations									
Maternal human capital									
Less than high school	1,150	0.41	0.49	1,350	0.25	0.43	3,900	0.10	0.30
High school degree	1,150	0.29	0.45	1,350	0.35	0.48	3,900	0.25	0.43
Vocational/technical	1,150	0.21	0.41	1,350	0.29	0.46	3,900	0.30	0.46
Bachelor’s or higher	1,150	0.09	0.29	1,350	0.11	0.31	3,900	0.35	0.48
Children’s potential future human capital									
Early mental skills	1,050	45.46	8.80	1,250	46.29	9.51	3,600	51.35	9.83
Early motor skills	1,000	48.72	10.24	1,250	50.44	10.54	3,600	49.28	10.11
Parental scaffolding of children’s human capital									
Preference for small class size	1,150	0.74	0.44	1,350	0.67	0.47	3,900	0.66	0.47
Preference for care to have an educational component	1,150	0.88	0.33	1,350	0.92	0.27	3,900	0.82	0.39
Expects child to graduate from college	1,100	0.76	0.43	1,350	0.72	0.45	3,900	0.74	0.44
Family, Community, and State Contexts									
Immigrant household	1,150	0.60	0.49	1,350	0.09	0.29	3,900	0.06	0.24
Maternal flexible work	550	0.52	0.50	850	0.52	0.50	2,400	0.66	0.47
Family poverty	1,150	0.70	0.46	1,350	0.74	0.44	3,900	0.32	0.47
Mother’s age at birth	1,150	26.32	6.17	1,350	25.19	6.18	3,900	28.58	6.18
Gender is female	1,150	0.48	0.50	1,350	0.51	0.50	3,900	0.49	0.50
Low birth weight	1,150	0.25	0.43	1,350	0.43	0.50	3,900	0.33	0.47
Household work status Two parents both employed	1,150	0.38	0.49	1,350	0.10	0.31	3,900	0.32	0.47
Two parents with paternal employment	1,150	0.02	0.14	1,350	0.02	0.16	3,900	0.03	0.16

	Mexican-origin			Black			White		
	n	*M*	*SD*	*N*	*M*	*SD*	*n*	*M*	*SD*
Two parents with maternal employment	1,150	0.04	0.18	1,350	0.03	0.16	3,900	0.02	0.13
Two parents unemployed	1,150	0.02	0.14	1,350	0.03	0.17	3,900	0.01	0.12
One parent employed	1,150	0.11	0.32	1,350	0.32	0.47	3,900	0.10	0.30
One parent unemployed	1,150	0.07	0.25	1,350	0.21	0.41	3,900	0.04	0.19
Other family structure employed	1,150	0.01	0.08	1,350	0.02	0.14	3,900	0.02	0.13
Other family structure unemployed	1,150	0.00	0.06	1,350	0.01	0.08	3,900	0.01	0.07
County some college	1,100	28.79	4.04	1,350	25.97	4.28	3,900	27.56	5.15
Number of child care lefts	1,150	2.20	0.94	1,350	1.97	0.94	3,900	1.73	0.99
County childcare salary	1,050	14690	2589	1,150	15461	4073	2,850	14569	3768
Subsidies scale	1,150	0.80	1.43	1,350	−0.03	0.83	3,900	0.23	0.98
Regulation scale	1,150	0.49	0.51	1,350	0.39	0.76	3,900	0.50	0.90
ECE taxes scale	1,150	0.64	1.30	1,350	−0.14	0.91	3,900	0.18	1.20
Subsidy eligibility	1,150	32503	6605	1,350	28174	6693	3,900	27909	7050
Preservice training	1,150	77.31	72.91	1,350	39.80	65.14	3,900	37.95	66.29
Inservice training	1,150	7.94	7.60	1,350	11.45	6.08	3,900	11.80	7.48
Licensing requirement	1,150	3.43	1.99	1,350	4.75	3.18	3,900	4.27	2.63
Licensing tiers	1,150	1.92	1.12	1,350	2.53	1.19	3,900	2.17	1.18

Table 2.

Log Odds Results from Multinomial Logistic Models Predicting Early Care and Education vs. Parental Care at Age 4

	Model 1		Model 2	
	ECE	**Non-Parental**	**ECE**	**Non-Parental**
Race/Ethnicity				
Mexican-origin	−0.457**	0.238	−0.377	0.001
	(0.156)	(0.211)	(0.238)	(0.347)
Black	0.319*	0.341	0.472	0.427
	(0.143)	(0.199)	(0.259)	(0.342)
Human Capital Considerations				
Maternal (ref: less than high school) High school diploma	0.319*	0.168	0.343	0.113
	(0.126)	(0.182)	(0.195)	(0.277)
Vocational/technical	0.594***	−0.012	0.666**	−0.180
	(0.145)	(0.211)	(0.203)	(0.297)
B.A. degree or higher	1.309***	0.330	1.443***	0.270
	(0.191)	(0.275)	(0.236)	(0.337)
Child's potential				
Early pre-academic skills	−0.004	−0.027**	−0.005	−0.026**
	(0.006)	(0.008)	(0.006)	(0.008)
Early motor skills	−0.012*	−0.001	−0.011*	−0.002
	(0.006)	(0.008)	(0.006)	(0.008)
Parental Scaffolding Pref. for small size	−0.234*	0.233	−0.232*	0.240
	(0.098)	(0.142)	(0.099)	(0.142)
Pref. for educational component	1.024***	−0.168	1.030***	−0.166
	(0.118)	(0.154)	(0.119)	(0.154)
Expects child to graduate college	0.059	−0.103	0.052	−0.105
	(0.107)	(0.148)	(0.107)	(0.149)
Race/Ethnicity x Maternal Human Capital Mexican-origin x high school			−0.010	0.226
			(0.288)	(0.403)
Mexican-origin x vocational			−0.083	0.483
			(0.327)	(0.449)
Mexican-origin x B.A.			−0.410	0.243
			(0.465)	(0.616)
Black x high school			−0.027	−0.177
			(0.324)	(0.438)
Black x vocational			−0.220	0.076
			(0.338)	(0.462)
Black x B.A.			−1.006*	−0.813

	Model 1		Model 2	
	ECE	**Non-Parental**	**ECE**	**Non-Parental**
			(0.458)	(0.655)
Constant	2.731***	4.404***	2.697***	4.464***
	(0.575)	(0.877)	(0.582)	(0.885)

Note:

*** $p < 0.001$,

** $p < 0.01$,

* $p < 0.05$ with full family, community, and state covariates. Standard errors in parentheses. $n = 6{,}400$.

Table 3.

Significant Three-Way Interactions from Multinomial Logistic Models Predicting Early Care and Education Arrangements at Age 4

	vs. Parental Care		
		Non-Parental Care Only	
	Early Childhood Education	1	2
Race/Ethnicity (ref: white)			
Mexican-origin	−2.816 *	−3.061 *	−0.346
	(1.099)	(1.444)	(0.849)
Black	−2.041	−1.124	−0.938
	(1.187)	(1.510)	(0.977)
Human Capital Considerations			
B.A. degree or higher	1.311 ***	0.322	−1.200
	(0.193)	(0.275)	(1.188)
Early pre-academic skills	−0.025 *	−0.048 ***	−0.034 **
	(0.011)	(0.015)	(0.011)
Expects child to grad. college	−1.052	−1.727	−0.096
	(0.668)	(0.926)	(0.146)
Two-Way Interactions			
Maternal B.A. x pre-acad. skills			0.028 (0.022)
Maternal college expect. x pre-acad. skills	0.023+	0.032	
	(0.013)	(0.018)	
Mexican-origin x maternal B.A.			5.402 ** (1.971)
Black x maternal B.A.			1.770 (2.755)
Mexican-origin x child pre-acad. skills	0.051 *	0.071 *	0.011
	(0.023)	(0.030)	(0.017)
Black x child pre-acad. skills	0.054 *	0.030	0.027
	(0.026)	(0.033)	(0.020)
Mexican-origin x maternal coll. exp..	2.401	5.123 **	
	(1.254)	(1.703)	
Black x maternal coll. exp	2.231	1.047	
	(1.407)	(1.902)	
Three-Way Interactions			
Mexican-origin x maternal B.A. x child pre-academic skills			−0.117 ** (0.042)
Mexican-origin x maternal coll. exp. x child pre-academic skills	−0.053 * (0.026)	−0.109 ** (0.036)	
Black x maternal B.A. x			−0.051
child pre-academic skills			(0.054)
Black x maternal coll. exp. x	−0.053	−0.020	
child pre-academic skills	(0.030)	(0.041)	

	vs. Parental Care		
		Non-Parental Care Only	
	Early Childhood Education	**1**	**2**
Constant	3.671 *** (0.725)	5.428 *** (1.052)	4.801 *** (0.971)

Note:

*** $p < 0.001$,

** $p < 0.01$,

* $p < 0.05$

Subsample n = 6,400

All models included the full set of family, community, and state covariates. Interactions with maternal B.A. also included corresponding interactions with other categories of maternal education.