Early Child Care and the School Readiness of Children from Mexican Immigrant Families[1]

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Combining conceptual models from immigration and educational research, this study investigated whether a normative antecedent to the transition to formal schooling in the contemporary U.S. – early child care – links Mexican immigrant status to various aspects of school readiness. Regression models with nationally representative data revealed that children from Mexican immigrant families were overrepresented in parental care and underrepresented in center-based care compared to their native peers from other race/ethnic populations, which helped to explain a significant but small portion of their generally lower rates of both math achievement and externalizing symptoms in kindergarten. This mediating role of early child care, however, paled in comparison to family socioeconomic circumstances.

The children of Mexican immigrants represent both a great challenge to and a potentially rewarding opportunity for the American educational system. This population is large and growing exponentially. It is poor. It faces a future in which advanced educational credentials are all but necessary to accessing stable, rewarded sectors of the labor force (Portes and Rumbaut, 2001; Hernandez, 2004). Piecing together these factors suggests that successfully educating these children will promote intergenerational social mobility, which, in time, will elevate the social and economic prospects of the Mexican-American population as a whole as it becomes a more sizeable and influential slice of the U.S. If the *challenge* of countering the academic underperformance that currently characterizes Mexican-origin adolescents can be met, then the *opportunity* of using education as a mechanism of social mobility in a crucial segment of the American population can be realized (Kao, 1999; Valenzuela, 1999; Stanton-Salazar, 2001).

Social and behavioral scientists can inform this process by determining how best to facilitate the educational trajectories of today's Mexican immigrant

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children. As part of this scientific endeavor, this study focuses on the school transition at the foundation of these trajectories. School readiness refers to the cognitive, social, and emotional skills that allow children to "get a good start" in elementary school. Considering that decades of educational research has documented that group-level differences in school readiness compound into much larger achievement gaps by the end of high school, school readiness is a major ingredient in demographic disparities in educational attainment and, as such, should be a major target in eliminating them (Entwisle and Alexander, 2002). The driving question of this study, therefore, is: how can we promote the school readiness of children from Mexican immigrant families?

To answer this question, this study focuses on the period just prior to elementary school. Today, because of changes in real wages, maternal employment, divorce, and non-marital fertility, the norm is for children to spend this period in some child care setting (Hofferth *et al.*, 1998). Given evidence that Mexican immigrants may access the child care market in different ways than other parents and that early child care is related to school readiness, the children of Mexican immigrants may be differentially prepared for the American educational system than their peers (Scarr, 1998; Brandon, 2004). If so, then early child care may be an important lever in promoting the educational trajectories of these children that are so central to their life chances. This study tests this possibility with a nationally representative sample of kindergarteners from the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K).

Such research offers a window into how Mexican-born parents manage their children's opportunities and whether such actions have implications for the future life prospects of these children and of the Mexican-American population as a whole. Importantly, it does so in a way that is theoretically derived and policy-focused. By drawing on two rich literatures – segmented assimilation (Portes and Zhou, 1993) and the developmental significance of early child care (NICHD Early Child Care Research Network, 2002) – that are rarely connected to each other, this study targets a policy-amenable context that may affect change during a critical intervention point in the educational career in a population that is, quite literally, the future of the U.S.

THE GROWTH OF MEXICAN IMMIGRATION

Because Mexican immigrants tend to be socioeconomically disadvantaged, the social mobility of their children is highly dependent on their success in the American educational system. Yet, ample evidence suggests that these youth make lower grades, take lower-level courses, and are more likely to drop out of

high school than many of their peers, although these differences are less pronounced for young people actually born in Mexico (Kao, 1999; Valenzuela, 1999; Stanton-Salazar, 2001).

As a window into this phenomenon, the segmented assimilation perspective (Portes and Zhou, 1993) emphasizes the importance of the contexts into which immigrant populations assimilate. On the one hand, some populations enter into higher-status segments of the race or class structure of the U.S. (with all of the social and economic advantages that these segments entail), so that their assimilation leads to upward socioeconomic trajectories over time and across generations that conform to straight-line images of the immigrant experience. On the other hand, some populations enter into lower-status segments, and their experiences in the disadvantaged communities, schools, and job markets associated with these segments hinder social mobility. In the former case, children see among people they know clear evidence that each generation can use the educational system to build on the gains of the previous generation, and, consequently, they form a sort of two-way partnership with the system that allows them to realize better and greater opportunities. In the latter, children see among people they know little evidence that the system will work with them or for them in this way, and their educational trajectories slowly trail off in a self-fulfilling way (Portes and Zhou, 1993; Zhou, 1997; Hirschman, 2001).

By virtue of their high rates of poverty as well as their language and skin color, Mexican immigrants tend to enter lower-status segments of American society in which socioeconomic disadvantages combine with powerful macro-level forces (e.g., segregation, discrimination) to constrain their opportunities to effectively educate their children despite the very real value that they place on education (Bean and Stevens, 2003). Their children often attend poorly organized, problematic schools in which they are given an inferior education. Even in better schools, they are often channeled into lower-level curricula by school personnel (Valenzuela, 1999; Suarez-Orozco and Suarez-Orozco, 2001; Crosnoe, 2005). Over time, these children realize that the educational system will not do for them what it does for their schoolmates and that it will not help them improve on the socioeconomic status of their parents. At this point, the narrowing opportunity structure couples with negative peer influences to disconnect many of these youth from school. Thus, children from Mexican immigrant families need to use the educational system (and to be served by the system) to move up but, at the same time, will have a hard time doing so as they traverse poor educational environments with little institutional or peer support.

As Mexican immigration transforms the U.S., reversing the observed trajectories of the children of Mexican immigrants should be a top priority.

One approach would be to target the structure of American society itself that creates these trajectories (e.g., dismantling segregation, expanding social services). Another would be to identify critical intervention points *before* these trajectories are set. In order to demonstrate the value of developmental perspectives in demographic research, this study takes the latter approach.

THE IMPORTANCE OF SCHOOL READINESS

Research on the educational trajectories of immigrant youth in general and Mexican immigrant youth in particular has typically focused on immigration-related inequalities in secondary and postsecondary education (Stanton-Salazar, 2001; Glick and White, 2003). Yet, educational research has documented that most demographic inequalities do not simply appear in the latter stages of schooling but build over time (Pianta and Walsh, 1996). Focusing on the early origins of these immigration-related inequalities, therefore, is an important consideration.

To be more specific, the school transition model contends that various child populations start school differing in life circumstances and experiences that, on top of cognitive competencies, make them more or less school-ready (Alexander and Entwisle, 1988; Entwisle and Alexander, 2002). This school readiness, in turn, affects rates of early learning. Because early learning is the basis of future ability group placement, teacher expectations, and skill sets, starting points shape later trajectories. Thus, cross-population differences in school readiness translate into small inequalities in early learning that compound with time. Certainly, ample evidence supports this basic pattern (Farkas, 1996; Pianta and Walsh, 1996; Entwisle and Alexander, 1999).

Mexican immigrant youth do appear to have lower levels of school readiness (Suarez-Orozco and Suarez-Orozco, 2001; Hernandez, 2004; Crosnoe, 2006). The school transition model suggests that, if these levels could be substantially raised, these children would likely follow more successful trajectories through elementary school that would then help to channel them into higher-level curricula and other learning opportunities in secondary school. The peer norms, teacher support, and expectations encountered in these experiences would, in turn, help to protect Mexican immigrant adolescents from the kinds of educational trajectories predicted by the segmented assimilation perspective and observed in many national-level studies. In other words, equality at the starting gate (Lee and Burkham, 2002) would promote equality across the full course of schooling, which would better enable the educational system to serve as a mechanism of social mobility in the Mexican immigrant population.

The primary argument of this study is that early child care provides "leverage" in this pursuit. First, early child care differentiates immigrant and native populations (Brandon, 2004). Second, it has well-documented associations with school readiness (NICHD ECCRN, 1998). Third, it is policy amenable. Unlike family dynamics, peer relations, cultural values, and other factors commonly studied in relation to education, it can be directly targeted by both private and public initiatives (Scarr, 1998). Thus, early child care is a potential linking mechanism between Mexican immigrant status and early learning and adjustment that must be explored.

EARLY CHILD CARE IN THE U.S.

Before explaining the specific role of early child care in this immigration-focused application of the school transition model, a general overview of early child care is in order. Rapid increases in maternal employment and single parenthood and sharp declines in real wages have come together to make nonparental child care the *normative* experience for children in the U.S. before entering school (Hofferth, 1996; Scarr, 1998; West, Denton, and Germino-Hausken, 1999; Committee of Family and Work Policies, 2003; Takanishi, 2004).

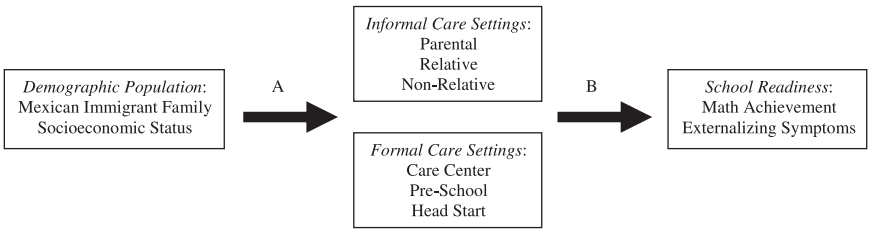
On the one hand are informal child care settings, which tend to be home- or neighborhood-based. *Parental care* falls into this category. *Non-relative care* can occur in the child's home (e.g., babysitter) or outside, usually when children from multiple families are cared for by an adult in her or his own house. Likewise, *relative care* can occur inside or outside the child's home, but it is more likely to be one-on-one and, by definition, involves a caregiver who is a member of the child's family, most often grandparents. These settings may have some component of learning and cognitive stimulation, but they tend to have unstructured activities, no formal curriculum, and untrained providers. Because of their lower child to adult ratios, they are typically adult- rather than peer-focused (Clarke-Stewart, Gruber, and Fitzgerald, 1994; Scarr, 1998; Magnuson *et al.*, 2004). On the other hand are formal settings – structured *child care centers* that, in theory, focus on development and learning. They are usually accredited, age-graded, staffed by trained personnel, and educationally equipped, and they involve a good deal of peer interaction (Clarke-Stewart *et al.*, 1994; Scarr, 1998; Takanishi, 2004). *Preschools* are an important subset of this category. They are usually part-time, with a greater focus on intellectual development (e.g., reading). Their curricula are more formalized, and their staffs are more educated (Magnuson *et al.*, 2004). *Head Start* is a federally funded preschool program for poor children along with health and other family services (Currie, Garces, and Thomas, 2002).

Although *hotly* debated for decades, the developmental implications of early child care are becoming clearer. Beginning with cognition, children in center-based care – especially of high quality – read better, score higher on achievement tests, and possess more intellectual skills (e.g., memory, language) than children in parental or other informal care settings, largely because of the structured educational activities in these centers (NICHD ECCRN, 1998, 2000; Gilliam and Zigler, 2001; Magnuson *et al.*, 2004). Indeed, two classic experiments, the Perry Pre-School Project and the Abecedarian Project, both demonstrated cognitive gains that persisted for years from exposure to comprehensive preschool programs (Berrueta-Clement *et al.*, 1984; Campbell *et al.*, 2001). Turning to socioemotional development, time in center-based care – somewhat independent of quality – is also related to higher levels of interpersonal problems, especially aggression and conflict, when compared to parental and informal care arrangements (Vandell and Corasaniti, 1990; Bates *et al.*, 1994; Campbell and Ramey, 1994; Belsky, 1999; NICHD ECCRN, 2005). A likely explanation for this pattern is that the greater peer interaction found in formal care settings, while filling an important socializing role, may also foster children's adoption of aggressive interpersonal strategies, although these effects tend to fade over time (NICHD ECCRN, 2005).

EARLY CHILD CARE AND MEXICAN IMMIGRATION

The immigration-focused application of the school transition model in this study has two pieces (see Figure I). First, the children of Mexican immigrants will congregate in different sectors of the early child care market than their peers (Path A). Mexican immigrants are relative newcomers to the U.S. who tend to be socioeconomically disadvantaged but also embedded in family and community networks that can be accessed for practical assistance and services

Figure I. A Conceptual Model of the Role of Early Child Care in the Transition to Elementary School of Children from Mexican Immigrant Families



(Suarez-Orozco and Suarez-Orozco, 2001; Brandon, 2004; Takanishi, 2004). Consequently, they have less knowledge about the formal child care market, less means to access this market, and more alternatives (e.g., neighbors, relatives) to this market, all of which suggest that they will rely on informal child care arrangements more than formal care settings before their children start school compared to native parents, especially more socioeconomically advantaged native parents. Indeed, the most comprehensive national study of child care in immigrant populations reported two pieces of evidence in line with the expectations captured in Path A: (1) immigrant families (not necessarily Mexican-origin) used less center-based care than non-immigrant families; and (2) Mexican-American families (not necessarily immigrant) used less center-based care than those from other race/ethnic populations (Brandon, 2004).

Second, these immigration-related differences in early child care will translate into differences in both academic and socioemotional aspects of school readiness (Path B) net of important selection factors. Because time in informal care, compared to formal care, is associated with lower rates of early learning *as well as* lower socioemotional problems in school, the tendency for Mexican immigrants to rely on informal arrangements relative to parents in other race/ethnic populations suggests that children from Mexican immigrant families will be less school-ready in the academic sense but more school-ready in the socioemotional sense.

Bringing Path A and Path B together, this study will compare the child care arrangements of children from Mexican immigrant families (the young Mexican-born *or* U.S.-born children of Mexican-born parents) to those of their peers from other race/ethnic populations in the year before kindergarten and then examine the degree to which these different child care arrangements predict rates of math achievement and externalizing symptoms in kindergarten for all children and then for each population. Following conventions of segmented assimilation research, the comparison populations include White, African-American, and other Latino/a children born in the U.S. to U.S.-born parents (*native* children from this point on). The general hypothesis is that children from Mexican immigrant families will demonstrate lower levels of cognitive school readiness and higher levels of socioemotional school readiness than their peers because of their tendency to be in informal rather than formal child care.

DATA AND METHODS

Data

This study drew on data from the ECLS-K, a nationally representative sample of American kindergarteners collected by the National Center for Education

Statistics (NCES). This sample was created in multiple stages: the selection of 100 primary sampling units (typically counties) across the nation, 1,000 schools within these units, and then 22,782 students within these schools. All students were enrolled in kindergarten at the first wave of data collection in the fall of 1998. Subsequent waves occurred in the spring of 1999 (second half of kindergarten), fall of 1999 (first half of first grade, 25% subsample), spring of 2000 (second half of first grade), and spring of 2002 (second half of third grade). Data from another follow-up in the spring of 2004 (second half of fifth grade) has not been released. ECLS-K administered evaluative and diagnostic tests to the children and interviewed their parents, teachers, and school administrators (for more information on the design of ECLS-K, see National Center for Education Statistics, 2002 or Denton and West, 2002).

The analytical sample for this study consisted of all children who met three selection criteria: participated in data collection in kindergarten and first grade (because immigration data were collected in the latter), members of four race/ethnic populations of interest in this study (defined and described below), and had parent/teacher interviews ($n = 12{,}711$). Table 1 presents statistics for each stage of the selection process. This process slightly weighted the analytical sample towards children who had two parents, but this trend was not pronounced.

Measures

Descriptive statistics for all study variables are included in the Appendix.

TABLE 1
Descriptive Statistics for Each Stage of the Sample Selection Proces

	M (SD)			
	Sample 1[a]	Sample 2[b]	Sample 3[c]	Sample 4[d]
Gender (female)	0.49	0.49	0.49	0.49
	(0.50)	(0.50)	(0.50)	(0.50)
Socioeconomic status	0.01	0.02	0.01	0.02
	(0.80)	(0.80)	(0.79)	(0.79)
Family structure (two-parent)	0.57	0.60	0.61	0.62
	(0.50)	(0.49)	(0.49)	(0.50)
In parental child care only	0.16	0.16	0.16	0.15
	(0.36)	(0.36)	(0.36)	(0.36)
N	21,260	17,348	13,842	12,711

Notes: [a]All children who participated in the first wave of data collection in the first half of kindergarten (fall 1998).
[b]Sample 1, excluding children who did not participate in data collection in the second half of first grade (spring 2000).
[c]Sample 2, limited to native White, native African-American, native Latino/a, and Mexican immigrant children.
[d]Sample 3, excluding children who did not have a parent or teacher interviewed.

Race/Ethnicity and Immigration Status. NCES created a categorical measure of race/ethnicity. The respondents' parents also reported the birthplace of their children (in the kindergarten data collection) and themselves (in the first grade data collection). Coupling these reports allowed the creation of four mutually exclusive dummy variables. The first, children from Mexican immigrant families, included all children born in Mexico or born in the U.S. to Mexican-born parents. This grouping follows conventions for studying *young* children in immigrant populations (*see* Suarez-Orozco and Suarez-Orozco, 2001). Because no national origin data on grandparents were collected, I was unable to identify third-plus-generation Mexican-American children (those born in the U.S. to U.S.-born parents with Mexican-born grandparents, great grandparents, etc.). The remaining three included all White, African-American, and other Latino/a children who were born in the U.S. to U.S.-born parents.

Early Child Care. During the kindergarten data collection, parents responded to a battery of questions about their use of child care in the year before the child started kindergarten. Their responses were collapsed into an eight-category variable: 1 = parental (15.4%), 2 = relative (12.1%), 3 = non-relative (10.2%), 4 = preschool (32.6%), 5 = center-based (6.9%), 6 = Head Start (7.7%), 7 = other (including multiple arrangements, 4.6%), 8 = missing care information (10.7%). The last two categories were created for control purposes only and will not be discussed in the interpretation of results. For some analyses, this categorical variable was broken down into eight dummy variables. Two control variables were also created based on parent reports: child care quantity (average hours/week) and cost (dollars spent/month).

Math Achievement. At each data collection, children took timed achievement tests in math, reading, and general knowledge. Because English language difficulties could potentially affect their test performance, ECLS-K administered the Oral Language Development Scale to all children from homes in which English was not the primary language. Spanish-speakers who fell below a certain threshold on this scale took Spanish-language versions of the math tests but were excluded from the other two assessments. All non-Spanish-speakers who fell below the threshold were excluded from all three assessments. For this reason, math achievement only will be considered in this study. The math test included items on conceptual knowledge, problem solving, number properties/operations, and measurement. Children took the first stage of the test and then, based on their performance, the low-, medium-, or high-difficulty stage. Item

Response Theory allowed the development of single proficiency scores across test sequences, ranging from 8 to 61, with a mean of just under 20 for the spring of kindergarten (see Appendix).

Externalizing Symptoms. In the spring of kindergarten, teachers rated children on their symptoms of externalizing disorder, including instances in which they argued, fought, got angry, or disturbed others' activities (four-point scale, where 1 = never and 4 = very often). As seen in the Appendix, this variable had a low mean, indicating generally good functioning in the sample. Collecting adult observations of child outcomes is a common practice in studies of young children (*see* NICHD ECCRN, 2002) and collecting teacher reports is a common practice in studies of schooling (*see* National Center for Education Statistics, 1990). However common, such reports introduce bias if teachers have problems evaluating students from different cultures. Still, these reports serve a useful purpose in national surveys, in which collecting independent observations is difficult, and have demonstrated reliability in educational analyses (Crosnoe, 2005).

Family Socioeconomic Factors. Given the potential for Mexican immigrant status to be confounded with social and economic status (Kao, 1999), this study created five factors from kindergarten data to be included in analyses of the linkages between Mexican immigrant status and child care and between Mexican immigrant status and the two child outcomes. The first measured the socioeconomic status of the family. NCES created this measure, ranging from −5 (low) to 3 (high), by taking the mean of five standardized items: father/male guardian education (1 = 8th grade, 9 = post-graduate degree), father/male guardian occupational status (self-reported occupations were grouped into 22 categories and assigned prestige scores from the General Social Survey), mother/female guardian education, mother/female guardian occupation, and family income (all money, in dollars, earned by household members in the last year). A hotdeck imputation strategy was employed to impute missing data, in which any respondent missing on a particular item was given the value of another respondent randomly selected from a group who demonstrated many similarities with the missing respondent on other survey items.

The second of these factors was family poverty, an NCES-created binary marker that differentiated families whose income fell below the official U.S. poverty line from all others. The third factor was a binary measure of family structure (1 = two parents married and living together, 0 = other family arrangement) based on parent-reported household rosters. Parents' responses

to a series of question about work were collapsed into a set of five dummy variables for maternal employment status: mother working full-time (the modal category), mother working part-time, mother not working, no mother present, and mother missing employment information (10%). The same set of dummy variables was created for paternal employment status.

Family Environmental Factors. Of course, socioeconomic factors are not the only aspects of family life that can vary across different populations and also affect child outcomes. Consequently, this study created five kindergarten measures gauging the educational environment of the home. For home learning environment, I replicated a measure created by Magnuson and colleagues (2004) that consisted of the mean of seven items (1 = not at all, 2 = once or twice a week, 3 = 3–6 times a week, 4 = everyday), including how often the parent built things with the child, taught the child nature lessons, and played games with the child ($\alpha = 0.67$). Also based on the work of Magnuson and colleagues with ECLS-K, I used parent reports to measure the number of books present in the home and child's reading frequency (1 = never, 2 = 1/2 times per week, 3 = 3–6 times per week, 4 = everyday). Parents' involvement in education was the sum of seven binary indicators of involvement activities at school in the last year (1 = yes), such as PTA membership, parent-teacher conferences, and volunteering at school. Lastly, primary family language was a binary marker based on parent reports that differentiated families in which a language other than English was spoken regularly from all others.

Control Variables. To account for additional sources of demographic variability, all analyses controlled for gender (1 = female, 0 = male), age (in years), and urbanicity (NCES-created dummy variables for large city, city fringe/small city, small town/rural). Achievement analyses also controlled for the timing of assessment (measured in days from the start of assessment), since students who took the test later in the school year would have had more time to learn, as well as the language status of assessment (1 = Spanish version, 0 = English version).

Plan of Analyses

The main goal of this study was to examine the role of early child care in the transition to elementary school of children from Mexican immigrant families. The first step in this process was the examination of the linkage between Mexican immigrant status and early child care arrangements. I estimated two multiple logistic regression models with the eight-category child care variable

as the outcome. In the initial model, this outcome was predicted by the race/ethnicity and immigration status dummy variables (with Mexican immigrant family as the omitted reference category) and the control variables. In the final model, the family socioeconomic variables were added as predictors.

The second step in this process involved the investigation of the linkage between early child care and the two child outcomes. For each outcome, I estimated four linear regressions: (1) using only the race/ethnicity and immigration status dummy variables (with Mexican immigrant family as the omitted reference category) and control variables as predictors; (2) adding all family factors as predictors; (3) adding the child care dummy variables as predictors; and (4) adding interaction terms between each child care variable and each race/ethnicity and immigration status dummy variable. Although the issue of selection into child care and its implication for child outcomes cannot be discounted, the control of multiple family factors (as well as preliminary tests of school context factors) did address – and partially account for – this issue.

All models were estimated with the survey procedure in STATA. This procedure corrected the clustered nature of ECLS-K by taking into account the region and school of each child. It also allowed the use of sample weighting to account for the oversampling of some groups in the ECLS-K design (*see* Denton and West, 2002 for more on these issues).

EMPIRICAL ANALYSES

A Profile of Children from Mexican Immigrant Families

Following the school transition model, the life circumstances of children from Mexican immigrant families probably differ from their peers in other race/ethnic populations at the point of the transition into school in ways that impact their school readiness. Table 2 presents descriptive statistics, by population, in order to draw a basic picture of where children from Mexican immigrant families and their peers "come from" when they enter elementary school.

Beginning with early child care, children from Mexican immigrant families were by far the most likely of all four populations to be cared for solely by parents. Over one-third fell in this category during the year before they entered kindergarten. This proportion did not even approach one-fourth in any other population. Although children from Mexican immigrant families who were enrolled in nonparental care were most likely to be in education-focused care (e.g., 30% were in preschool or Head Start), their representation in all forms of formal child care was lower than the other race/ethnic populations. Their representation in more informal settings of nonparental child care was

TABLE 2
COMPARISON OF RACE/ETHNIC POPULATIONS ON EARLY CHILD CARE AND FAMILY FACTORS

	M (SD)			
	Mexican Immigrant	Native White	Native African-American	Native Latino/a
Early Child Care Factors				
Parental care[a]	0.34_{a} (0.47)	0.14_{c} (0.35)	0.11_{d}(0.31)	0.20_{c} (0.40)
Relative	0.12_{b} (0.32)	0.10_{b} (0.30)	0.16_{a} (0.37)	0.18_{a} (0.38)
Nonrelative	0.06_{b} (0.24)	0.13_{a} (0.33)	0.03_{c} (0.18)	0.07_{b} (0.25)
Preschool	0.16_{d} (0.37)	0.38_{a} (0.49)	0.21_{c} (0.41)	0.26_{b} (0.44)
Center	0.02_{c} (0.15)	0.07_{ab} (0.26)	0.08_{a} (0.27)	0.06_{b} (0.23)
Head Start	0.14_{b} (0.34)	0.04_{d} (0.19)	0.20_{a} (0.40)	0.10_{c} (0.30)
Nonparental care hours (per week)	16.24_{c} (18.27)	23.15_{b} (18.40)	34.09_{a} (19.76)	23.83_{b} (19.43)
Nonparental care cost (dollars)	11.11_{d} (27.12)	43.34_{a} (52.82)	21.18_{c} (37.46)	28.26_{b} (43.37)
Family Factors (Kindergarten)				
Socioeconomic status	-0.73_{d} (0.60)	0.23_{a} (0.73)	-0.38_{c} (0.74)	-0.22_{b} (0.70)
Family poverty status	0.50_{a} (0.50)	0.08_{d} (0.28)	0.40_{b} (0.49)	0.23_{c} (0.42)
Two-parent family structure	0.72_{a} (0.44)	0.70_{a} (0.46)	0.29_{c} (0.45)	0.58_{b} (0.49)
Mother not working for pay[b]	0.51_{a} (0.50)	0.26_{b} (0.44)	0.25_{b} (0.43)	0.28_{b} (0.45)
Mother works full-time	0.26_{c} (0.44)	0.39_{b} (0.49)	0.51_{a} (0.50)	0.42_{b} (0.49)
Mother works part-time	0.11_{c} (0.31)	0.24_{a} (0.43)	0.11_{c} (0.32)	0.18_{b} (0.39)
No mother present	0.00_{a} (0.06)	0.01_{a} (0.12)	0.01_{a} (0.11)	0.02_{a} (0.13)
Father not working for pay[b]	0.05_{a} (0.21)	0.03_{b} (0.16)	0.04_{a} (0.20)	0.05_{a} (0.22)
Father works full-time	0.67_{b} (0.47)	0.74_{a} (0.44)	0.32_{d} (0.47)	0.59_{c} (0.49)
Father works part-time	0.04_{a} (0.19)	0.02_{b} (0.14)	0.01_{b} (0.12)	0.03_{a} (0.18)
No father present	0.11_{c} (0.32)	0.11_{c} (0.31)	0.50_{a} (0.50)	0.23_{b} (0.42)
Home learning environment	2.43_{c} (0.59)	2.76_{a} (0.48)	2.74_{a} (0.53)	2.70_{b} (0.53)
Number of books in home	21.38_{d} (29.53)	96.05_{a} (59.05)	41.18_{c} (41.59)	58.91_{b} (51.13)
Child's reading frequency	2.78_{c} (1.00)	2.95_{b} (0.89)	3.14_{a} (0.91)	2.98_{b} (0.91)
Parental involvement in education	2.90_{c} (1.68)	4.15_{a} (1.56)	2.99_{c} (1.84)	3.50_{b} (1.80)
Primary family language (non-English)	0.84_{a} (0.36)	0.01_{c} (0.07)	0.01_{c} (0.04)	0.21_{b} (0.41)
n	784	8,883	2,277	1,777

Notes: Means with different subscripts differ significantly ($p < 0.001$), as determined by post hoc ANOVA tests. An "a" subscript designates the largest mean, with smaller means designated in descending alphabetical order.
[a]Binary markers for missing and other a part of this set of dummy variables.
[b]Binary marker for missing a part of this set of dummy variables.

also relatively low, but they did not differ from their peers as much in these categories of early child care. Because of their lower rates of nonparental care in general, children from Mexican immigrant families spent less time overall in nonparental care arrangements, and their parents spent less money on such care.

Turning to differences in family background, Mexican immigrant families had by far the lowest level of socioeconomic status and, again by far, the highest level of poverty. Indeed, a simple majority of these families lived below the federal poverty line. Mexican immigrant children were, along with native White children, most likely to live with both of their parents, and they were more likely than all other populations to have a mother who was not in the paid labor force. In terms of home environment, these children generally scored lower than their peers on all factors of educational management and enrichment at home, and they were much more likely to hear a language other than English at home.

These systematic differences in early child care and family background are, of course, connected. The socioeconomic circumstances of Mexican immigrant parents no doubt affect the learning environments that they can construct and also drive their use of early child care. Thus, determining the patterns of early child care use in this population, and the role of these patterns in school readiness, requires a turn from these basic comparisons to multivariate analyses.

Settings of Early Child Care by Race/Ethnicity and Immigration Status

The first goal of this study was to determine whether children from Mexican immigrant families had different early child care profiles than their peers from other race/ethnic populations. Specifically, these children were expected to have more experience in informal settings of early child care (including parental care) and less experience in formal settings.

Table 3 contains the results of two multinomial logistic regressions predicting child care arrangement in the year before kindergarten. This table requires further explanation on two points. First, both Model 1 and Model 2 in Table 3 contain the results from regressions in which parental child care served as the reference category to which all other child care arrangements were compared. Both models were estimated multiple times, however, with the reference category rotated among all eight categories of child care. Presenting the results of all of these different iterations of Model 1 and Model 2 would be quite unwieldy. Consequently, only the results from the model with parental care as the reference are presented in Table 3, but the results from all estimated models will be summarized in the text. Second, the child care outcome had eight categories, the last two of which were other child care and missing child care information. As noted in the previous section, these two categories were included for control purposes only. For this reason, the results for these two categories are not presented in Table 3 or discussed in the text even though they were part of the multinomial models.

Looking first at Model 1, native White children had greater odds of being in any non-Head Start form of child care than in parental child care (the reference category for the child care outcome) compared to children from Mexican immigrant families, as evidenced by statistically significant odds ratios greater than 1 for native White in the first four columns. For example, the odds ratio for native White in the first column of Model 1 ($OR = 2.22$, $p < 0.001$) indicates that native White children were 122% ($OR - 1 \times 100$) more likely to be in relative care (vs. parental care) than children from Mexican immigrant

TABLE 3
Selected Results from Multinomial Logistic Regressions Predicting Child Care Type

	Odds Ratios (vs. Parental Care)[a]				
	Relative	Nonrelative	Preschool	Center	Head Start
MODEL 1 (n = 12,639)					
Race/Ethnicity and Immigration Status					
Mexican immigrant family[b]	–	–	–	–	–
Native White	2.22***	4.68***	6.78***	8.30***	0.48*
Native African-American	4.68***	2.19**	4.80***	12.77***	3.67***
Native Latino/a	2.14***	2.21**	2.80***	3.99***	1.23
Control Variables					
Gender (female)	1.03***	1.42***	1.17*	0.97	1.35**
Age (years)	0.68**	0.84	0.88	0.70*	0.95
Residence in small town/rural[b]	–	–	–	–	–
Residence in large city	1.01	0.79+	2.29***	1.22	0.38***
Residence in city fringe/large town	0.80+	0.81	2.20***	1.01	0.33***
MODEL 2 (n = 12,628)					
Race/Ethnicity and Immigration Status					
Mexican immigrant family[b]	–	–	–	–	–
Native White	1.20	1.39	2.20***	2.84**	0.54*
Native African-American	1.64***	0.68	2.32**	3.35***	2.54***
Native Latino/a	1.12	0.92	1.44*	1.61+	1.12
Control Variables					
Gender (female)	1.02	1.37**	1.15+	0.94	1.37**
Age (years)	0.64**	0.86	0.91	0.68*	0.91
Residence in small town/rural[b]	–	–	–	–	–
Residence in large city	0.95	0.63***	1.83***	1.03	0.37***
Residence in city fringe/large town	0.74*	0.64**	1.62***	0.85	0.36***
Family Socioeconomic Factors					
Socioeconomic status	1.16	3.13***	2.89***	2.50***	0.86*
Family poverty status	1.02	1.50+	0.88	1.38	1.83***
Two-parent family structure	0.65**	0.71*	1.03	0.53***	0.65**
Mother not working for pay[bc]	–	–	–	–	–
Mother works full-time	11.62***	13.47***	2.63***	15.81***	2.18***
Mother works part-time	4.46***	4.45***	1.67***	3.97***	1.42**
No mother present	14.49***	15.61***	2.62*	19.42***	3.14*
Father not working for pay[bc]	–	–	–	–	–
Father works full-time	1.32	1.75+	1.47+	1.43	0.93
Father works part-time	0.77	0.71	1.26	0.84	1.24
No father present	2.25**	1.96*	1.86**	2.00*	1.03

Notes: Results for the other and missing categories not presented.
[a]Binary marker for missing and other care were also categories in the outcome for the multinomial logistic regression.
[b]Reference category for set of dummy variables (race/ethnicity, region, urbanicity, maternal employment, paternal employment).
[c]Binary marker for missing a part of this set of dummy variables.
***$p < 0.001$.
**$p < 0.01$.
*$p < 0.05$.
+$p < 0.10$.

families. Virtually the same pattern held when comparing native African-American children to children from Mexican immigrant families and when comparing native other Latino/a children to children from Mexican immigrant families. Thus, echoing the descriptive analyses, children from Mexican immigrant families were much more likely to be cared for solely by their parents than native children from other major race/ethnic populations, net of numerous non-socioeconomic demographic characteristics.

Turning to Model 2, taking into account family socioeconomic factors attenuated many of these significant odds ratios. Holding these factors constant, native White children did not differ from children from Mexican immigrant families in informal child care arrangements, although they continued to differ in their tendency to be in formal care instead of parental care. Essentially the same pattern held when comparing children from Mexican immigrant families to native other Latino/a children with similar family socioeconomic profiles. Differences between native African-American children and children from Mexican immigrant families were more stable relative to Model 1. Thus, when comparing families of similar socioeconomic means, native children (White, African-American, other Latino/a) were more likely to be found in non-Head Start forms of formal child care (especially preschool) than children from Mexican immigrant families, who were more likely to be cared for at home by their parents.

The results of the remaining seven iterations of both Model 1 and Model 2 can be best summarized by giving the general race/ethnic and immigration-related differences for each type of early child care. Again, the other or missing categories will not be discussed.

Relative Care. In general, native White children were more likely than children from Mexican immigrant families to be in any nonparental form of child care than to be in relative care. This same pattern held only for the formal child care vs. relative care comparisons when family socioeconomic status was controlled. Regardless of family socioeconomic circumstances, native African-American children tended to be in formal child care arrangements rather than relative care, compared to children from Mexican immigrant families. Native other Latino/a families demonstrated a slight preference, compared to Mexican immigrant families, for formal child care over relative care, but this pattern was completely explained by socioeconomic differences between these two types of families. Thus, when comparing relative care to formal child care (preschool, center care), native White and African-American children were more likely to be found in the former, children from Mexican immigrant families in the latter.

Nonrelative Care. Whether comparing families of similar or different socioeconomic means, native White children were more likely than children from Mexican immigrant families to be in non-Head Start formal child care settings, and children from Mexican immigrant families were more likely than native White children to be in nonrelative care or family-based care (*e.g.*, relative, parental). Regardless of family socioeconomic circumstances, native African-American children were more likely than children from Mexican immigrant families to be in any form of nonparental care than to be in nonrelative care. Mexican immigrant families and other Latino/a families did not differ in their usage of nonrelative care whether family socioeconomic status was taken into account or not. Again, when comparing nonrelative care to formal child care (preschool, center care), native White and African-American children were more likely to be found in the former and children from Mexican immigrant families in the latter.

Preschool and Center Care. In general, native White and native African-American children were more likely, compared to children from Mexican immigrant families to be in preschool and/or center care than to be in any other form of child care. This basic pattern held when comparing families of similar or different socioeconomic circumstances. A similar pattern extended to the comparison of children from native other Latino/a families to children from Mexican immigrant families, except that it only involved preschool (and not center care) vs. all other forms of child care. Thus, non-Mexican children were generally more likely to be found in center-based care, whether preschool or not, than children from Mexican immigrant families.

Head Start. Children from Mexican immigrant families were always more likely than their native White peers to be in Head Start compared to all other forms of child care (including parental care). Native African-American and other Latino/a children were generally more likely than children from Mexican immigrant families to be in Head Start than to be in informal child care, but this difference was completely a function of socioeconomic differences between Mexican immigrant families on the one hand and native, non-Mexican families on the other.

In sum, native White and African-American children tended to cluster in non-Head Start formal child care settings in the year before kindergarten. Children from Mexican immigrant families tended to cluster in informal child care settings, especially sole parental care. Native other Latino/a children fell somewhere in the middle, with a slight tendency towards formal settings, but, more than other populations, this tendency was mostly explained by their

socioeconomic circumstances. Based on the results of eight iterations of two multinomial logistic regression models, the clearest breakdown was this: children from Mexican immigrant families in parental care, native White children in preschool, native African-American children in nonpreschool center care, and native other Latino/a children dispersed across all types.

Early Child Care and Math Achievement

Elucidating the implications of these differences in early child care was the second major goal of this study. Specifically, this study considered whether the early child care experiences of children during the year before kindergarten predicted two aspects of their school readiness and explained race/ethnic and immigration-related differences in these aspects of school readiness. Table 4 presents the results of three sets of linear regressions designed to pursue this aim.

Beginning with math achievement in kindergarten (see first panel in Table 4), children from Mexican immigrant families scored about seven points lower on the achievement test, net of the demographic control variables, than native White children, and around two or three points lower than native other Latino/a and native African-American children (Model 1). Adding the full set of family factors (socioeconomic, environmental) reduced the White-Mexican difference to just over one point and essentially eliminated the other two differences (Model 2).

Model 3 included the child care dummy variables as well as the controls for child care duration and time. Analysis of R^2 and F-Test changes indicated that this block of variables significantly improved explanatory power. Compared to parental child care, preschool enrollment prior to kindergarten was associated with higher math achievement in kindergarten ($b = 1.84$, $p < 0.001$), as was time in center and nonrelative care. Test statistics generated by STATA ranked all child care dummy variables according to the degree of their contribution to kindergarten math achievement: (1) pre-school; (2) center care; (3) nonrelative care; and (4) relative care, Head Start, and parental care (these three not significantly different from each other). Moreover, the addition of these child care dummy variables altered some of the previously observed race/ethnic differences. The point differential – adjusted for family socioeconomic and environmental differences – between native White children and children from Mexican immigrant families was attenuated by just under 20% by the addition of the child care factors, especially preschool enrollment. The corresponding point differential between native African-American children and children from Mexican immigrant families actually increased by

TABLE 4
Selected Results from Linear Regressions Predicting Two Child Outcomes

	b (SE) for Math Achievement			*b (SE)* for Externalizing Symptoms		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Race/Ethnicity and Immigration Status						
Mexican immigrant family[a]	–	–	–	–	–	–
Native White	6.97***	1.12**	0.90*	0.10**	0.13*	0.11*
	(0.28)	(0.42)	(0.41)	(0.03)	(0.05)	(0.05)
Native African-American	2.37***	−0.65	− 0.80+	0.33***	0.24***	0.21***
	(0.29)		(0.41)	(0.04)	(0.06)	(0.06)
Native Latino/a	2.83***	−0.40	−0.46	0.16***	0.10+	0.08
	(0.39)	(0.40)	(0.39)	(0.04)	(0.06)	(0.06)
Family Socioeconomic Factors						
Socioeconomic status	–	2.44***	2.44***	–	−0.03*	−0.04**
		(0.15)	(0.15)		(0.01)	(0.01)
Family poverty status	–	−0.35*	−0.37*	–	0.03	0.03
		(0.21)	(0.21)		(0.03)	(0.02)
Two-parent family structure	–	0.79***	0.77***	–	−0.15***	−0.14***
		(0.20)	(0.20)		(0.03)	(0.03)
Mother not working for pay[ab]	–	–	–	–	–	–
Mother works full-time	–	−0.07	−0.13	–	0.11***	0.09***
		(0.18)	(0.19)	(0.02)	(0.02)	
Mother works part-time	–	0.09	0.04	–	0.02	0.01
		(0.22)	(0.22)		(0.02)	(0.02)
No mother present	–	−0.28	−0.52	–	0.14*	0.12+
		(0.59)	(0.62)		(0.07)	(0.06)
Father not working for pay[ab]	–	–	–	–	–	–
Father works full-time	–	0.86*	0.76*	–	−0.03	−0.04
		(0.33)	(0.33)		(0.05)	(0.05)
Father works part-time	–	1.22+	1.17+	–	−0.02	−0.03
		(0.75)	(0.72)		(0.06)	(0.06)
No father present	–	0.79*	0.70*	–	−0.05	−0.06
		(0.36)	(0.36)		(0.05)	(0.05)
Family Environmental Factors						
Home learning environment	–	−0.14	−0.10	–	−0.05**	−0.04*
		(0.14)	(0.14)		(0.02)	(0.02)
Number of books in home	–	0.01***	0.01***	–	−0.01*	−0.01*
		(0.00)	(0.00)		(0.00)	(0.00)
Child's reading frequency	–	0.34***	0.33***	–	0.01	0.01
		(0.09)	(0.09)		(0.01)	(0.01)
Parental involvement in education	–	0.31***	0.28***	–	−0.01+	−0.01+
		(0.04)	(0.05)		(0.00)	(0.00)
Primary family language (non-English)	–	−1.13**	−1.07**	–	−0.01	−0.00
		(0.37)	(0.36)		(0.04)	(0.04)
Early Child Care Factors						
Parental care[ac]	–	–	–	–	–	–
Relative	–	–	0.28	–	–	−0.02
			(0.27)			(0.03)
Nonrelative	–	–	0.96***	–	–	0.05
			(0.25)			(0.03)
Preschool	–	–	1.84***	–	–	0.11***
			(0.23)			(0.02)

TABLE 4 (Continued)
Selected Results from Linear Regressions Predicting Two Child Outcomes

	b (SE) for Math Achievement			*b (SE)* for Externalizing Symptoms		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Center	–	–	1.00***	–	–	0.31***
			(0.28)			(0.04)
Head Start	–	–	0.21	–	–	0.13***
			(0.34)			(0.04)
R^2	0.18	0.31	0.32	0.07	0.10	0.11

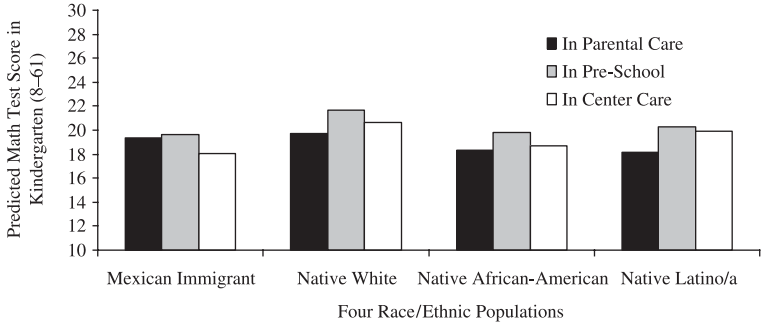
Notes: All models controlled for gender, age, urbanicity, hours in nonparental care per week, and cost of nonparental care. The math achievement models also controlled for timing and language status of assessment.
[a]Reference category for set of dummy variables (race/ethnicity, maternal employment, paternal employment).
[b]Binary marker for missing a part of this set of dummy variables.
[c]Binary marker for missing and other a part of this set of dummy variables.
Math models: n = 11,616. Externalizing models, n = 11,446.
***p < 0.001.
** p < 0.01.
* p < 0.05.
+ p < 0.10.

about 15% with the addition of the child care factors, especially center care and preschool.

A fourth model was also estimated (not shown in Table 4). In this model, each early child care dummy variable was interacted with each race/ethnic and immigration status dummy variable. Five such interaction terms significantly predicted kindergarten math achievement: native White x preschool (b = 1.64, p < 0.05), native White x center care (b = 2.40, p < 0.05), native African-American x center care (b = 1.67, p < 0.05), native other Latino/a x preschool (b = 1.84, p < 0.05), native other Latino/a x center care (b = 3.06, p < 0.05). To interpret these interaction terms, I calculated the predicted level of math achievement in kindergarten for the average child – at the mean or mode for each study variable – in each of the four race/ethnic populations and in each of three (parental care, preschool, and center care) child care arrangements. Figure II presents these predicted achievement scores.

In all four populations, children in preschool before kindergarten (gray bar) had higher levels of math achievement in kindergarten than their same-race/ethnic peers in sole parental care (black bar), but this difference was much smaller, actually less than one-third of a point, for children from Mexican immigrant families than for children from the other race/ethnic populations (difference around two points). In general, children in center care before kindergarten (white bar) had higher levels of math achievement in kindergarten than their same-race/ethnic peers in sole parental care (black bar), but this was

Figure II. Predicted Math Achievement, by Population and Child Care Type



not the case among children from Mexican immigrant families. In this population, math achievement was higher among children transitioning into elementary school from sole parental care.

Early Child Care and Externalizing Symptoms

Turning to externalizing symptoms in kindergarten (second panel in Table 4), children from Mexican immigrant families had slightly fewer symptoms, net of the demographic control variables, than their native White, native other Latino/a, and, especially, native African-American peers (Model 1). Adding the full set of family factors reduced, but did not entirely eliminate, these differences (Model 2).

In Model 3, the coefficients for all three types of formal child care were positive and statistically significant and significantly increased the R^2 and F-value of the model, indicating that children in formal care had more externalizing symptoms than children in parental care only, even when family background was taken into account. Test statistics revealed the following rank order of the child care variables in terms of their contribution to externalizing symptoms: (1) center care; (2) Head Start; (3) preschool; (4) nonrelative; and (5) parental, relative care. These early child care factors slightly attenuated the previously observed race/ethnic and immigration-related differences in externalizing symptoms, usually on the order of 10%. Again, a fourth model (not shown in Table 4) was estimated with child care x race/ethnicity and immigration status interaction terms. None of these interaction terms reached statistical significance, indicating no substantial variation in the association between early child care and externalizing symptoms across the various race/ethnic and immigrant populations.

Summary of Results

Children from Mexican immigrant families entered elementary school slightly less school-ready in the academic sense than their peers from other race/ethnic populations and slightly more school-ready in a socioemotional sense. The tendency for these children to spend the year before entering school in informal, rather than formal, child care arrangements accounted for a small but significant portion of these differential levels of school readiness. Importantly, however, the contribution of formal child care to academic school readiness was slightly smaller for these same children.

CONCLUSION

The last several decades have witnessed the rapid growth of the Mexican immigrant population. For traditional entry point states (*e.g.*, California, Texas), the influx of the children of these immigrants into the educational system is the most striking demographic trend in recent memory. In many ways, doing well in school is these children's best ticket to the future, but the obstacles to doing well are great (Suarez-Orozco and Suarez-Orozco, 2001). For these reasons, understanding the educational trajectories of Mexican-origin youth – especially how to counterbalance obstacles in these trajectories – has been a major endeavor of immigration and educational research. This study attempted to advance this understanding by focusing on a potential policy lever (child care) at a critical intervention point (the transition into elementary school). To begin the discussion, I lay out three take-home points of this study. Afterwards, I provide greater detail about why and how these conclusions were made.

1. Inequalities in school readiness related to Mexican immigration forecast long-term inequalities in educational attainment. Thus, early childhood is a potentially useful target of policies aimed at reducing these inequalities.
2. The early child care arrangements of children from Mexican immigrant families do not explain a substantial amount of their relatively low rates of school readiness. Their family background does. Thus, parents' socio-economic status, more than early child care, would be an effective target of large-scale policy initiatives focusing on the education of children from Mexican immigrant families.
3. Although the data suggest that universal early child care programs would not provide a substantial boost to the school readiness of children from Mexican immigrant families, any such programs put into place for other

reasons will likely have a small side effect on the academic school readiness of these children. This side effect would only be realized, however, if these programs did not interfere with their generally positive socioemotional development.

Beginning with the first point, children from Mexican immigrant families in ECLS-K entered kindergarten at an immediate academic disadvantage relative to their native White, African-American, and Latino/a peers, at least as measured by standardized test performance in math. Following the school transition model in the sociology of education (*see* Alexander and Entwisle, 1988) and the segmented assimilation perspective in immigration research (*see* Portes and Zhou, 1993), these early differences – which were closely related to family socioeconomic circumstances – are likely the foundation for the often negative experiences that Mexican-origin youth have in the educational system and, ultimately, their truncated rates of educational attainment. After all, initial academic performance sets teacher expectations and dictates curricular assignments for years to come, both of which contribute to learning and also select young people into peer groups with varying levels of academic focus. Consequently, reducing these early differences in achievement would likely reduce some of the differences in later educational outcomes.

Turning to the second take-home point, this study drew on a substantial amount of developmental and educational research to posit that the early child care arrangements used by Mexican immigrant parents would explain a significant portion of the lower levels of academic school readiness of their children compared to their native peers. Drawing such a conclusion would require that children from Mexican immigrant families be enrolled in different kinds of early child care prior to elementary school than their peers, that these types of care predict academic achievement in elementary school, and, finally, that accounting for the early care arrangements of children from Mexican immigrant families would eliminate or substantially reduce the association between Mexican immigrant status and achievement. To some degree, these requirements were met. Mexican immigrants were more likely to take care of their children at home by themselves than native parents from three other race/ethnic populations, especially Whites, and they were less likely to enroll their children in formal care settings (e.g., preschool, center care). At the same time, preschool and center-care enrollment predicted higher levels of math achievement in kindergarten. Finally, adjusting for preschool and center-care enrollment reduced the achievement difference between children from Mexican immigrant families and their native White peers by a moderate, if not substantial, 20%.

Yet, careful inspection of these results suggests that, from a policy standpoint, early child care would not be a particularly useful remedy for educational inequalities related to Mexican immigration. One issue is that all of the effects in the mediational pathway (Mexican immigrant status→early child care→ math achievement) were small in magnitude, so that the overall mediational effect could only be considered weak. Another issue is the relatively consistent pattern that children from Mexican immigrant families might "get less" from formal care – in terms of achievement – than their native peers. For example, the associations between formal care arrangements and math achievement were typically lower for the former than the latter. Together, these two issues *suggest* that putting extensive resources towards early child care programs for children from Mexican immigrant families would likely do little to close the gap in school readiness between them and other children. Consequently, an interest in reducing immigration-related differences in education should not be the motivating factor for the large expenditures required to create such a system.

Understanding why the expected returns to formal care in the Mexican immigrant population were not realized in this study can also inform this policy effort. One potential reason for these weak findings is that ECLS-K only provided information about child care type, not quality of child care. Consider that past research from the NICHD Early Child Care Research Network has demonstrated that quality of care, within and across types, is of paramount importance and a primary reason for the apparent benefits of formal care. To the extent that the formal care arrangements of children from Mexican immigrant families differed in quality from those of other children, the failure to take quality into account could have obscured the potential role of formal care in boosting the school readiness of children from Mexican immigrant families. Quality of care must be taken into account in this line of research, therefore, before policy recommendations can be made. Another major reason for the weak findings was that family socioeconomic status accounted for most of the differences in child care arrangements and school readiness between children from Mexican families and their native (especially non-White) peers. Clearly, improving the socioeconomic circumstances of Mexican immigrant parents would provide the most powerful boost to the school readiness of their children. Unfortunately, policies aimed at socioeconomic improvements for other disadvantaged populations have not proven successful, or popular, in recent decades.

Finally, the third take-home point of this study concerned the potential for small improvements in the school readiness of children from Mexican immigrant families to be a side effect of rather than motivating factor for child

care policy. Specifically, the National Education Association has called for the creation of a free, universal preschool system that facilitates the flow of *all* children into preschool, and other groups have advocated that this system be coordinated with the primary grades of elementary schools (Foundation for Child Development, 2005). As already mentioned, the results of this study suggest that such a system should not be implemented solely in the hope of reducing educational inequalities related to Mexican immigration. Yet, the universal preschool movement has many other motivating factors, such as its potential to reduce socioeconomic disparities in education and to alleviate work-family tensions for employed mothers. If the universal systems that are being tested in several states (e.g., California, Oklahoma, New Jersey) become widespread because of these other motivating factors, they might have the unintended benefit of providing a small boost to the school readiness of children from Mexican immigrant families. These side benefits, however, will only be realized if universal preschool programs balance enrichment of academic *and* socioemotional school readiness. Echoing past research (Belsky, 1999), formal early child care was associated with small increases in externalizing symptomatology in this study. Thus, academic benefits could come with socioemotional risks. For children from Mexican immigrant families, therefore, the key would not be simply to promote their access to formal education-oriented care before the start of elementary school but instead to also focus efforts on enriching the socioemotional "curriculum" in these care settings so that it equaled the cognitive curriculum. Importantly, achieving such a balance is a major aim of universal preschool initiatives.

Of course, these policy implications are derived from data analysis that, although sophisticated and competently done, is also preliminary. As already mentioned, this study could not consider child care quality. It also could not effectively study multiple forms of academic achievement. Moreover, it captured only a small window of time rather than the long-term trajectories of behavior and adjustment that, in addition to being prioritized by the school transition and segmented assimilation models, are required to fully understand the implications of early child care for differential levels of school readiness. From both a practical and theoretical standpoint, then, the investigation of the different starting points of various child populations must be matched with an equally comprehensive exploration of the subsequent pathways that these populations take throughout the educational system. Unfortunately, ECLS-K had only basic measures of early child care and no plan to extend past elementary school, and the premier longitudinal data source on early child care – the NICHD Study of Early Child Care – contains no Mexican immigrants.

Consequently, attempts to extend the time frame of this line of research must, for now, be conducted below the national level.

Considering the political and economic context in which we live at the start of this new century, attempts to figure out how to improve the educational prospects of the children of Mexican immigrants could not be more important. This study was one such attempt. Although the findings of this study were too equivocal to make strong policy recommendations, they did elucidate several issues that need to be considered in the policy-making process and also pointed out avenues of potentially valuable future research. Such future research should be conducted because the early education of the children of immigration is at the heart of debate that could benefit from a sound base of knowledge generated from the social and behavioral sciences.

APPENDIX

Descriptive Statistics for All Study Variables

	M	*SD*
Race/Ethnicity and Immigration Status		
Mexican immigrant family[a]	0.06	0.24
Native White	0.67	0.47
Native African-American	0.17	0.37
Native Latino/a	0.10	0.31
Early Child Care Factors		
Parental care	0.15	0.36
Relative	0.13	0.33
Nonrelative	0.10	0.30
Preschool	0.33	0.47
Center	0.07	0.25
Head Start	0.08	0.27
Other	0.05	0.21
Missing care information	0.11	0.31
Nonparental care hours (per week)	24.58	19.26
Nonparental care cost (dollars)	36.25	49.63
Child Outcomes		
Math achievement	19.86	7.35
Externalizing symptoms	1.61	0.63
Family Socioeconomic Factors		
Socioeconomic status	0.02	0.79
Family poverty status	0.18	0.38
Two-parent family structure	0.62	0.49
Mother not working for pay[a]	0.26	0.44
Mother works full-time	0.43	0.50
Mother works part-time	0.21	0.41
No mother present	0.02	0.13
Father not working for pay[a]	0.03	0.19
Father works full-time	0.65	0.48
Father works part-time	0.02	0.15
No father present	0.19	0.39
Family Environmental Factors		
Home learning environment	2.73	0.51
Number of books in home	78.62	60.18
Child's reading frequency	2.97	0.91
Parental involvement in education	3.81	1.72
Primary family language (non-English)	0.08	0.27
Control Variables		
Gender (female)	0.49	0.50
Age (years)	6.24	0.37
Residence in small town/rural	0.23	0.42
Residence in large city	0.38	0.48
Residence in city fringe/large town	0.40	0.49
Language status of assessment (Spanish)	0.03	0.18
Timing of assessment (days from start)	64.63	15.84

Notes: n = 12,711.

[a]Binary marker for missing a part of this set of dummy variables.

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