

## Linking Socioeconomic Status to Mexican American Youth's Academic Achievement Through Parent Involvement in Education

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This study uses data from 1,609 Mexican American students and their parents who participated in the National Educational Longitudinal Study to examine (a) the influence of multiple socioeconomic components on youth's academic achievement, and (b) whether these effects were mediated by parent involvement in education. Results show that the factor with the strongest direct relationship to youth's test scores was maternal occupation, followed by family income. Maternal education level was also predictive of youth's academic achievement, whereas fathers' education and occupation were not predictive of academic achievement. Parent involvement in education mediated the influence of both family income and maternal education on youth's academic achievement. Pathways between socioeconomic status, parent involvement, and youth's academic achievement suggest that Mexican American parents' abilities to invest economic, social, and human capital in their children's education leads to higher academic achievement among youth. Further, it appears that mothers and fathers play distinct roles in these processes. The article discusses implications of study findings for future research and interventions to improve academic achievement among Mexican American youth.

**Keywords:** *academic achievement, socioeconomic status, parent involvement, Mexican American families, Latinos*

The hope that parents hold for their children's success in life is often first vetted through their children's success in school. Indeed, doing well academically is related to doing well later in life economically (Butler, Beach, & Winfree, 2008). Yet for many children, chances of academic success are diminished because of poverty (Duncan & Brooks-Gunn, 2000); family socioeconomic status (SES) is a strong predictor of children's academic outcomes (Sirin, 2005). Children's academic success is considered to be a key mechanism for disrupting the intergenerational transmission of poverty (Orfield, Losen, Wald, & Swanson, 2004). However, researchers and practitioners need to know more about the processes that link family SES with children's academic outcomes to effectively intervene in the intergenerational transmission of poverty.

Mexican American families experience disproportionately high rates of poverty in comparison with other racial/ethnic groups in the U.S. population (Pew Hispanic Center, 2011). Moreover, as compared with adults from other racial-ethnic groups, proportionately fewer Mexican American adults have high school diplomas, college degrees, or participate in postgraduate education (U.S. Census, 2009). Empirical accounts document that many Mexican American parents care deeply about their children's education, have high expectations for their children's academic achievement, and engage in a range of activities to promote their children's academic success (e.g., Chrispeels & Rivero, 2001; Martinez, DeGarmo, & Eddy, 2004;

Quirocho & Daoud, 2006). Unfortunately, a disproportionate number of Mexican American children in the United States underperform academically.

Indicators of academic achievement, such as grades and performance on standardized tests, are generally lower among Mexican American children than other immigrant and native-born groups (Kao & Thompson, 2003; Portes & Rumbaut, 2002). Moreover, as compared with youth of other Latino nationalities Mexican American youth are more likely to drop out of school (Driscoll, 1999; Landale, Oropesa, & Llanes, 1998, U.S. Census, 2009), and Latino youth's drop-out rates are more than twice as high as those of Black youth and 4 times greater than drop-out rates of White youth (Laird, DeBell, Kienzl, & Chapman, 2007). Higher rates of school drop out and lower achievement among Mexican American youth are of great concern given that Mexican Americans are by far the largest and fastest growing segment of the U.S. Latino population, accounting for 65.5% of U.S. Latinos and 10.3% of the entire U.S. population (Pew Hispanic Center, 2011). The higher rates of poverty and lower levels of SES among Mexican American families pose considerable barriers to academic advancement for Mexican American youth.

The effects of family SES on children's academic outcomes are, in large part, mediated by more proximal factors within family, school, and neighborhood contexts (Bradley & Corwyn, 2002), providing potential points for intervention in the intergenerational transmission of disadvantage. One such point is

parental involvement in education, which is often targeted by interventions that aim to improve children's academic outcomes. The present study examined the effects of family SES on academic outcomes of Mexican American youth, and the extent to which this relationship was mediated by parental involvement in youth's education, with the goal of identifying promising points for intervention.

### **SES and Academic Outcomes of Mexican American Youths**

SES is a broad construct representing a family's access to social and economic resources. Considerable variability exists in how SES is conceptualized—ranging from a single construct with multiple indicators to a set of unique components—and in the way the concept of SES is implemented empirically (Bollen, Glanville, & Stecklov, 2001). Empirical investigations most frequently assess SES using measures of three key variables: family income, parents' education level, and parents' occupations (Bradley & Corwyn, 2002). Family income is an indicator of the financial resources available to a family, whereas parental education levels and occupations are indicators of the parents' intellectual resources and social status, or human and social capital (Bradley & Corwyn, 2002; Conger & Donnellan, 2007). Other measures of SES include household composition, income to poverty ratio, and home ownership status (Hauser, 1994). A recent meta-analysis of studies examining the relationship of SES to academic outcomes showed that various components of SES (e.g., income, parental education, parental occupation) have different effects on academic outcomes (Sirin, 2005). Further, because SES components are often correlated, including only one measure of SES in analyses may overestimate the influence of that component (Sirin, 2005). Thus, when examining the relationship of SES to academic achievement it is important to simultaneously consider the unique effects of multiple SES components.

Empirical studies with Mexican American and Latino samples have demonstrated that family SES was a significant predictor of youth's academic outcomes, including test scores (Morales & Saenz, 2007), grade point average (GPA; Portes & Rumbaut, 2001) and school drop out (Stearns, Moller, Blau, & Potochnick, 2007). However, these studies examined the effect of a single SES factor that was either a composite of multiple indicators or a single measure of SES. A few studies have examined multiple components of SES in relation to academic outcomes among Latino or Mexican American youth. Only one study examining multiple components of SES in relation to academic achievement on standardized tests, which used

data from a national sample of Black and Hispanic students in the first through eighth grades, found that parental education was a stronger predictor of youth's reading and math achievement than family income (Roscigno, 2000). Studies using data from the 1990 U.S. Census have examined factors associated with school drop out among Mexican American (Landale et al., 1998) and immigrant (Feliciano, 2001) adolescents, and found that parental education was the SES component with the strongest protective effect on school drop out; however, none of these studies included income or parental occupation as SES components. Another study that examined school drop out among Hispanic youth included measures of parental education and family income (Driscoll, 1999), and found that income was the only significant predictor of school drop out. However, consistent with Roscigno's findings, Driscoll found the effect of income on adolescents' school drop out was small, and the odds ratio for the effect of parental education, although not significant, was similar to the odds ratios in the U.S. Census-based studies (i.e., Feliciano, 2001; Landale et al., 1998). The inconsistency of findings across these studies may be explained by differences in the sample sizes used in each study; Driscoll's sample size was considerably smaller than the samples used in the Census-based studies. Therefore, it is possible that findings on the unique effects of parental education and income on school drop out would have been consistent across studies if similar sample sizes and variables had been used.

In sum, the literature has suggested that different components of SES have unique relationships with academic outcomes among Mexican American and Latino youth, and that when analyses of SES components included variables for parental education and family income, the parental education variable had a stronger impact on youth academic outcomes. However, the current understanding of which SES components have the strongest effects are limited, especially with regard to effects on youth's academic achievement (e.g., performance on standardized tests). The present study addressed this gap in knowledge by simultaneously examining the effects of family income, parental education, and parental occupation on Mexican American youth's academic achievement.

This study goes a step further by examining the effects of paternal and maternal education and occupation separately. Both parents and adolescents in Mexican American families report that mothers and fathers take on distinct parenting roles (Crockett, Brown, Russell, & Shen, 2007; Parra-Cordona, Cordova, Holtrop, Villarruel, & Wieling, 2008). Moreover, Mexican American mothers' involvement and fathers' involvement appear to impact academic out-

comes through different processes (Plunkett, Henry, Houlberg, Sands & Abarca-Mortensen, 2008). Because education and occupation are indicators of parental human and social capital, it is likely that a parent's individual access to these resources will influence his or her involvement in children's education. For example, given that fathers are more likely than mothers to engage in discussions with youth (Parra-Cordona et al., 2008), a father's level of education is more likely to influence school-related discussions in the home than is a mother's level of education. Although this study considered access to human and social capital independently for mothers and fathers, access to financial resources was considered for the family as a whole because family income is a highly transferable resource that is assumed to be shared within families and because income is usually measured at the family level.

### **Parent Involvement and Academic Outcomes of Mexican American Youth**

Parental involvement in education has been defined in terms of parents' investment of resources in their children's education, and also characterized in terms of parents' behaviors, their personal support for education, and their provision of cognitively stimulating materials and activities (Grolnick & Slowiaczek, 1994). Other conceptualizations of parental involvement in education have emphasized the importance of considering parents' at-home involvement, as well as parents' school-based involvement with their children's education (Pomerantz, Moorman, & Litwack, 2007). In the present study, parent involvement in education was defined and measured in terms of (a) parents' investment of financial and personal resources to provide intellectually stimulating activities and materials (e.g., providing for extracurricular instruction and educational resources, engaging in enriching activities with youth), and (b) parents' spending time on school-related activities at home and at school (e.g., discussing school-related matters, helping with homework, and involving themselves in school organizations).

Previous studies identified associations between components of parent involvement in education with positive academic outcomes among Mexican American youth. For example, parental discussions of school-related matters have been associated with youth's higher test scores and grades (Altschul, 2011; Dumka, Gonzales, Bonds, & Milsap, 2009). Similarly, parents' provision of educational resources, enriching activities, and additional instruction have been associated with youth's higher test scores (Altschul, 2011). Finally, parents' academic support and their ability to help children with academics (e.g., homework) have

been associated with youth's academic motivation (Plunkett & Bamaca-Gomez, 2003; Plunkett et al., 2008). A study that examined youth's perceptions of parental involvement in education found that students who perceived that their parents held high academic expectations for them tended to have higher GPAs; however, students' perceptions of parental school monitoring, help with homework, and discussion of school-related items were not related to youth's GPA or academic aspirations (Carranza, You, Chhoun, & Hudley, 2009). In sum, although supporting evidence is still scant, parental involvement in education may be a promising link between family SES and Mexican American youth's academic outcomes.

### **Theoretical Background: Linking SES to Outcomes Through Parenting**

The diverse literature linking family SES to child and youth outcomes proposes at least two processes through which family socioeconomic advantage and disadvantage are transmitted to children through parenting (Bradley & Corwyn, 2002). One explanation based on the family stress model (Conger, Ge, Elder, Lorenz, & Simons, 1994), proposes that economic hardship leads to parental stress, which leads to family conflict and parental depression; in turn, parental conflict and depression reduces positive-parenting behaviors that promote child well-being. This cascading set of family-stress processes are most likely to affect the components of parental involvement in education that require parents' time and attention, such as discussing school-related matters with youth and engaging with school activities and organizations. This mechanism for the transmission of family SES to child outcomes is likely to be most closely linked to family income rather than parental education levels or parental occupations.

A second explanation for the effects of family SES on child outcomes suggests that as a household's socioeconomic resources increase, so does the parents' ability to invest resources—financial, as well as human and social capital—in their children's education, which in turn, improves their children's academic outcomes. This theory, referred to as the parent-investment model (Mayer, 1997), emphasizes parental decisions in selecting how much of their available resources to allocate to various family goals. These choices are subject to individual and cultural preferences, but are circumscribed by resource availability. Following the parent-investment model, family income (which is an indicator of available economic resources) combines with parental education and occupation (which are indicators of human and social capital and may influence preferences) to influence parents' investment in children's education. For

example, parents who themselves have attained higher levels of education may consider providing their children with intellectually stimulating activities to be of greater value than would parents who have little formal education. However, family income may facilitate or limit parents' abilities to provide activities that require a financial investment, such as private tutoring, extracurricular instruction, or college exam prep courses.

The two models linking family SES with parenting and child outcomes described above are not mutually exclusive, making it likely that family-stress processes operate simultaneously with parent-investment processes. Several recent studies have assessed the associations of both the family-stress and parent-investment models with children's cognitive and behavioral outcomes; these studies found parental stress was most often linked with children's behavioral outcomes whereas parental investment was most often associated with children's cognitive development (Gershoff, Raver, Aber, & Lennon, 2007; Guo & Harris, 2000; Linver, Brooks-Gunn, & Kohen, 2002; Yueng, Linver, & Brooks-Gunn, 2002). Given that these four studies used different nationally representative datasets, the findings are likely to be robust; however, all four studies were conducted with young children (i.e., infants to early-elementary age). Because early behavioral problems are likely to impact academic achievement by the time youth enter high school (Hill et al., 2004) both family stress and parental investment may affect youth's academic outcomes. In addition, effects of parental involvement differ among racial/ethnic groups (Hill et al., 2004), as well as across Latino nationalities (Figueroa-Moseley, Ramey, Keltner, & Lanzi, 2006); therefore, it is important to examine these processes within racial/ethnic groups rather than across multiple groups as was done in the studies cited above. In sum, it is not clear whether the dominant influence of parent investment on cognitive outcomes will hold for adolescent achievement and for Mexican American families.

### Present Study

Using nationally representative data, the present study examined effects of SES on academic achievement of Mexican American youth. Multiple components of SES (i.e., family income, parental education, and parental occupation) were examined simultaneously. In addition, following from literature suggesting that mothers and fathers have distinct parenting roles in Mexican American families, the effects of maternal and paternal education and occupations were examined independently. This study tested the hypothesis that discrete components of SES exert

unique effects on the academic achievement of Mexican American youth.

In addition, this study built on recent work that examined parenting as a link between SES and children's outcomes, and examined those links in that work to an older population of youth. Six forms of parent involvement in education were assessed as potential mediators of the effects of SES on youth's academic achievement. This study tested two hypotheses about the role of parent involvement in transmitting socioeconomic advantage to youth's outcomes. The first hypothesis posits that parent involvement in education mediates the association between SES and youth outcomes. The second hypothesis states that processes related to the parent-investment model play a stronger role in youth's academic achievement outcomes than do processes related to the family stress model. The paper concludes by considering implications of study findings for future research and interventions to improve Mexican American youth's academic outcomes.

### Method

#### Data

Data used in this study were obtained from the National Educational Longitudinal Study of 1988 (NELS). The NELS is a large, nationally representative, longitudinal data set collected by the National Center for Educational Statistics (NCES) to study educational processes and outcomes in secondary-school students (Curtin, Ingels, Wu, & Heuer, 2002). NELS first surveyed a nationally representative sample of students who were enrolled in Grade 8 in 1988, and then collected four waves of follow-up data from a sample of the participants through surveys administered in 1990, 1992, 1994, and 2000. NCES followed a two-stage sampling design: schools across several strata (region, urbanicity, public or private) were sampled first, and students were sampled within those schools. Latino and Asian students were oversampled, as were schools with high proportions of African American and Latino students. A parent questionnaire was used to obtain data about students' home lives; the parent or guardian who was best informed about the child's schooling was asked to complete the parent questionnaire. All questionnaires were self-administered paper-and-pencil instruments (Curtin et al., 2002).

**Mexican American sample.** This study used NELS data obtained in the base year (1988) and the first follow-up wave (1990) to assess the influence of family SES and parent involvement in education in eighth grade on subsequent academic achievement in 10th grade. Sampling weights allow for estimation of

parameters that generalize to the population of all eighth-grade students enrolled in U.S. public and private schools in the spring of 1988. Within these data, Mexican American students were identified as those whose parent selected Mexican American/ Mexican/Chicano as their Hispanic ethnicity, or whose parent selected Mexican American, Mexican, or Chicano as their ethnicity in any of the first three waves of the NELS study; only the ethnicity of the student and the student's biological parents was considered (i.e., caregiver's or guardian's ethnicity was excluded). The 1,609 cases used in this study approximate the results for the population of Mexican American eighth-grade student in the spring of 1988. Although NELS is the most current set of publically available, nationally representative data about Mexican American youth's academic achievement, these data are more than 20 years old, which presents significant limitations for interpretability of findings. These limitations are discussed more fully in the Discussion section.

**Student respondents.** The mean age of student respondents during the baseline data collection (i.e., eighth-grade year) was approximately 14.3 years ( $SD = .62$ ). Female students comprised 51.4% of the sample. A quarter (24.7%) of all Mexican American students in this sample had been retained in at least one grade in school prior to the eighth grade. About 15% of eighth graders resided in single-parent households. About half of the sample resided in Western states (52.5%), 36.6% resided in Southern states, 9.2% in North Central states, and 1.9% in the Northeastern United States. The sampled schools were divided among urban (34.8%), suburban (40.9%) and rural locations (24.3%).

**Parent respondents.** The parent questionnaire was most often completed by mothers (67.8%), with fathers completing 18% of questionnaires, and other relatives completing 2.3% of questionnaires (11.6% missing data). The majority of parent respondents were married (68.5%; 13.9% missing data). The majority of parent questionnaires were completed in English (69.9%), with 18.5% completed in Spanish (11.6% missing data).

## Measures

Variables for SES, controls, and parent involvement used to predict student academic achievement were based on data collected in the base year (eighth grade) from student and parent questionnaires. The outcome variable, *student achievement on standardized tests*, was taken from the first follow-up data (10th grade wave). All analyses were conducted using NCES-provided sample and population weights for the base year through first follow-up longitudinal

sample. Means and standard deviations reported below are for the weighted sample.

**Academic achievement.** Students were administered four standardized tests in reading, math, science, and history. The four standardized test scores were combined (as long as any two were available) into a single test-score composite ( $\alpha = .896$ ,  $M = 45.47$ ,  $SD = 7.40$ ; 9.9% missing data).

**SES status.** Five components of SES were included in analyses: family income, mothers' education, fathers' education, mothers' occupation, and fathers' occupation.

**Family income.** Parents reported their 1987 family income by checking one of 15 income ranges: none; less than \$1,000; \$1,000 to \$2,999; \$3,000 to \$4,999; \$5,000 to \$7,499; \$7,500 to \$9,999; \$10,000 to \$14,999; \$15,000 to \$19,999; \$20,000 to \$24,999; \$25,000 to \$34,999; \$35,000 to \$49,999; \$50,000 to \$74,999; \$75,000 to \$99,999; \$100,000 to \$199,999; and \$200,000 or more. The median 1987 family income for the sample was \$15,000 to \$19,999, which is the equivalent of \$28,800 to \$38,400 in 2011 dollars using the comparison price index measure of worth (Officer & Williamson, 2010). Income data were missing in 12.5% of cases.

**Mothers' and fathers' education.** Maternal and paternal education levels were derived from parent responses about the highest level of education of the parent and his or her spouse; in addition, when parent-provided data were missing, supplementary information was obtained from the student questionnaire. Roughly half of the Mexican American parents in the NELS sample had less than a high school education; the median level of mothers' education was a graduate equivalency degree (GED), whereas the median level of fathers' education was "beyond eighth grade, but not high school graduation" (i.e., no high school diploma or GED). No father or male guardian was present in 14.2% of the households, and no mother or female guardian was present in 1% of the sampled households. Data were missing in 3.3% and 3.9% of cases for mother's and fathers' education, respectively.

**Mothers' and fathers' occupation.** Maternal and paternal occupations were derived from parent or guardian responses about their own and their spouse's occupations. For cases in which a parent response was missing or the student lived in another household as well, presumably with another parent, the student's report of father's and mother's occupation was used. For cases in which the student lived in a single-parent household (15.2%) the second parent's occupation was set to *not available*. Using this algorithm, 3.7% of

mother occupation and 3.1% of father occupation data remained missing. Occupations were assigned Duncan socioeconomic index (SEI) values for analyses (Ingels, Scott, Lindmark, Frankel, & Myers, 1992). The median occupation among fathers and mothers was the response category described as “operative, such as meat cutter, assembler, machine operator, welder; taxicab, bus, or truck driver.”

**Parent involvement in education.** Parent involvement was assessed with six variables developed using NELS measures that matched key constructs of parental involvement found in the educational literature (for a review see, Pomerantz et al., 2007): parent–student discussion, parental help with homework, parental involvement with school organizations, educational resources in the home, extracurricular instruction, and enriching activities. When multiple indicators of a construct were available, the indicators were examined for internal reliability using Cronbach’s alpha, and scales created when internal reliability was adequate. When multiple indicators were not causally related to the construct, the indicators were summed to create an index rather than a scale (Bollen, 1989). When multiple indicators were not available, single items were used.

**Discussion of school related issues between parents and student (Discussion).** The parent survey included three questions that asked how often the responding parent or spouse (or partner) discussed school-related issues, such as school experiences, plans for high school, and plans for post-secondary education with their child; responses to each question were provided using a 4-point scale: *not at all* (0), *rarely* (1), *occasionally* (2), and *regularly* (3). The three items were averaged to produce a scale; the scale mean indicated that on average parents spoke with their children between *occasionally* and *regularly* about their school-related issues ( $M = 2.32$ ,  $SD = .72$ ). The scale had a Cronbach’s alpha of .825, which was used to define measurement error [ $\sigma^2(1-\alpha) = .091$ ] for this variable in the path model. Data were missing in 10.6% of cases.

**Parental help with homework (Homework).** The parent survey included one question that asked parents how frequently they or their spouse (or partner) helped the child with his or her homework. Responses were given using a 4-point scale: *seldom or never* (1), *once or twice a month* (2), *once or twice a week* (3), and *almost every day* (4). On average, parents helped their child with homework once or twice a month ( $M = 2.01$ ,  $SD = 1$ ; 14.6% missing data).

**Parental involvement with school organizations (School Organizations).** An index of parental involvement with school organizations (i.e., 0 to 5)

was created by combining parental reports of five types of involvement with school and parent organizations, such as belonging to a parent-teacher organization, attending meetings or activities, and volunteering at school. On average, parents had one type of involvement with their child’s school. Because few parents reported more than three types of involvement, the count variable was top coded at three to reduce skew ( $M = 0.85$ ,  $SD = 1.06$ ; 16.3% missing data).

**Educational resources in the home (Educational Resources).** The variable for educational resources was derived from student reports. The variable was computed as a count of 10 specific items present in the student’s home that could be helpful in school-related activities: a specific place to study, daily newspaper, magazines, encyclopedia, atlas, dictionary, typewriter, computer, more than 50 books, and a pocket calculator. ( $M = 5.94$ ,  $SD = 2.23$ ; 3.4 % missing data).

**Allocation of resources to out-of-school instruction (Extracurricular Instruction).** The parent survey asked parents whether their eighth grade student attended classes outside of regular school in eight interest areas such as art, dance, and computer skills. A count of the number of different kinds of instruction students received outside of school was computed. The count variable was top coded at two to reduce skew ( $M = 0.60$ ,  $SD = 0.76$ ; 21.2 % missing data).

**Parent and child involvement in enriching activities (Enriching Activities).** Parents were asked whether they and their children took part in five types of enriching activities, such as music performances, going to museums, and borrowing books from the library. An index of the number of enriching activities in which both parents and children engaged indicated that on average parents and children engaged in less than two of the same enriching activities ( $M = 1.67$ ,  $SD = 1.70$ ; 20.8 % missing data).

**Control variables.** Along with child gender, which is related to academic adjustment and achievement (e.g., Plunkett et al., 2008), two other variables relevant to Mexican American families and academic achievement were included as controls: *generation* and *language used in the home*.

**Generation.** Immigrant generation was included as a control because previous studies have shown generational status to be associated with SES and achievement in Latino samples (e.g., Landale et al., 1998). Generational status was determined using responses from the parent questionnaire indicating mother’s, father’s and student’s place of birth. In the weighted sample, 14.3% of students were first-generation immigrants (i.e., foreign born), 33% were

second generation (i.e., U.S.-born to immigrant parents), and 40% were third or higher generation (12.8% missing data).

**Language use in the home.** Primary language used in students' homes was also included as a control variable; the variable was determined using student

reports supplemented with information from parent reports. Responses to the question on home language use were recorded using a 4-point scale: *English only* (1), *English dominant* (2), *non-English dominant* (3), and *non-English only* (4). The median student lived in a non-English language dominant household ( $M = 2.55$ ,  $SD = .97$ ; 5% missing).

**Table 1**

*Correlations of SES, Parent Involvement, and Test Scores*

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Mothers' Education	-												
2. Fathers' Education	.434	-											
3. Mothers' Occupations	.523	.291	-										
4. Fathers' Occupations	.228	.616	.271	-									
5. Family Income	.272	.441	.356	.408	-								
6. Discussion of School Matters	.174	.223	.177	.161	.220	-							
7. Enriching Activities	.289	.259	.306	.197	.309	.308	-						
8. Inv. in School Organizations	.180	.101	.134	.085 <sup>a</sup>	.140	.209	.282	-					
9. Help with Homework	.168	.218	.210	.117	.200	.321	.202	.141	-				
10. Educational Resources	.327	.321	.318	.268	.405	.258	.297	.148	.158	-			
11. Extracurricular Instruction	.306	.144	.264	.074 <sup>a</sup>	.208	.136	.290	.268	.104	.264	-		
12. Immigrant Generation	.363	.275	.324	.138	.229	.142	.151	.109	.180	.229	.192	-	
13. Spanish Use in the Home	-.298	-.216	-.305	-.081	-.297	-.118	-.187	-.041 <sup>b</sup>	-.121	-.325	-.172	-.438	-
14. 10 <sup>th</sup> grade Test Scores	.260	.261	.311	.199	.274	.173	.249	.094	-.013 <sup>b</sup>	.282	.227	.082 <sup>a</sup>	-.112

Note. All correlations are significant at  $p \leq .001$ , with the exception of <sup>a</sup> significant at  $p \leq .01$ ; and <sup>b</sup> which were not significant.

## Analyses

Table 1 presents correlations between all study variables; correlations were calculated using pair-wise deletion of cases with missing data. Two path models were estimated; the first was used to determine the relationships of multiple socioeconomic factors to youth's academic achievement, and the second model was used to assess the extent to which parent involvement in education mediates these relationships. Unlike regression analyses, path models account for relationships between predictors and allow for the assessment of indirect effects via mediators. Indirect effects of SES indicators on youth's test scores were estimated by assessing multiple parent involvement mediators simultaneously (Preacher & Hayes, 2008). Indirect effects were calculated using the product-of-coefficients approach, such that a total indirect effect is the sum of specific indirect effects through each mediator.

Direct and indirect effects were calculated in Mplus 6.11 using maximum likelihood estimation with robust standard errors (MLR). Models were evaluated using the comparative fit index (CFI) and the Tucker Lewis index (TLI), both with cutoff values of .95, as well as the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR), both with cutoff values of .06 establishing good fit (Hu & Bentler, 1999). Models were estimated using the NCES provided sampling and population weights for the base year through first follow-up longitudinal sample; thus, modeling results account for different probabilities of being sampled and for nonresponse both at the school-level and at the individual student-level. Unconditional subclass analyses were conducted using the subpopulation option in Mplus. Standard errors were further adjusted for sample stratification and clustering of students within schools with the stratification and cluster options in Mplus.

To maximize available data for analyses and to reduce missing data bias, models were estimated using full information maximum likelihood (FIML) estimation within Mplus. FIML is a preferred method of model estimation for SEM with missing data (Allison, 2003) and estimating models with missing data, rather than using listwise deletion, is preferable when data do not appear to be missing completely at random (MCAR; Allison, 2003; Graham, 2009). Examination of missing data patterns showed that likelihood of missingness for some variables was dependent on other model variables, indicating that data did not satisfy MCAR assumptions and missing data estimation was warranted. Final analyses were conducted with FIML estimation. However, all models were also run using listwise deletion; both approaches yielded similar results, thus supporting the robustness of study findings. Because Mplus cannot take into account missing data for exogenous variables (i.e., generational status) without assuming that the variable is normally distributed, which was not applicable in this case, missing data for generation was estimated with a wide range of auxiliary variables using the expectation maximization (EM) algorithm within the Missing Value Analysis function in SPSS. Modeling results using the unestimated generation variable were similar to final results using the estimated variable.

## Results

### Effects of Socioeconomic Factors on Test Scores

The first model assessing the extent to which the five SES variables and controls predicted 10th grade test scores (Model 1, Figure 1) explained 14% of the variance in 10th grade test scores and provided a good fit to the data ( $\chi^2(6)=7.8$ ,  $p=.26$ ,  $\chi^2/df=1.3$ ; CFI=0.999; TLI=0.992; RMSEA=0.014; SRMR=0.015). Results showed that 3 of the 5 examined SES factors were significant direct predictors of test scores (listed in order of magnitude; standardized regression coefficients are in parentheses): mothers' occupation ( $\beta = .201$ ), family income ( $\beta = .130$ ), and mothers' education ( $\beta = .088$ ). Fathers' education and occupation were not significantly related to youth's test scores, although both paternal characteristics had significant indirect relationships via income ( $\beta = .062$  and  $\beta = .093$  respectively). Maternal occupation was a significant predictor of youth's test scores above and beyond its indirect effect through family income ( $\beta = .074$ ), and mothers' education was a significant predictor of youth's test scores despite not being related to family income, confirming that these indicators of parental human and social capital have an influence beyond that of family financial resources. Moreover, these findings highlight the distinct effects of mothers' and

fathers' education and occupation on youth's outcomes.

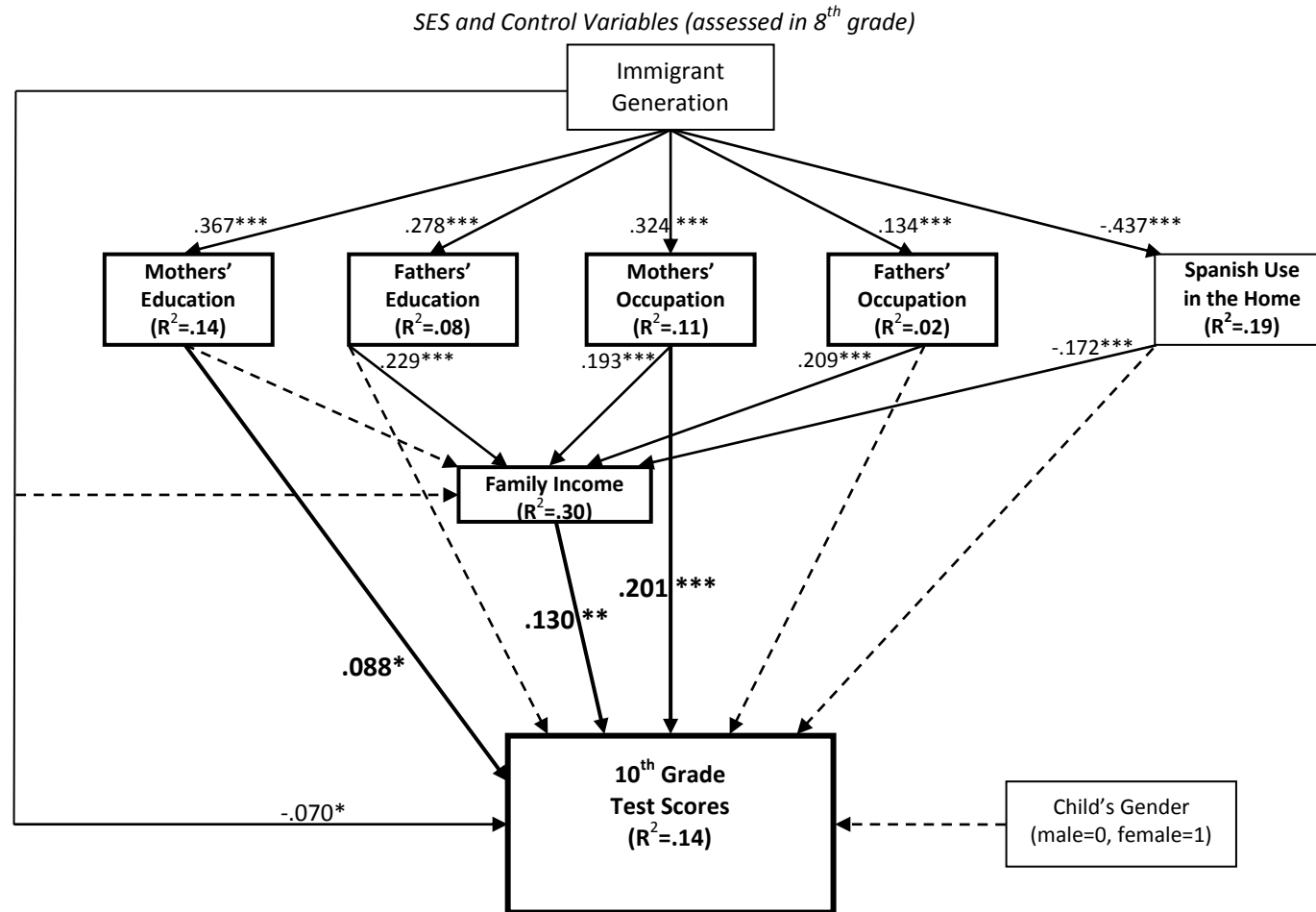
### Parent Involvement Factors as Mediators

The second model examining the extent to which parent involvement mediates the effects of SES on 10th grade test scores (Model 2) also provided a good fit to the data ( $\chi^2(6)=8.4$ ,  $p=.21$ ,  $\chi^2/df=1.3$ ; CFI=0.999; TLI=0.984; RMSEA=0.014; SRMR=0.012) and explained 20% of the variance in 10th grade test scores. Figure 2 shows a partial path diagram depicting the significant paths between SES, parent involvement in education, and test scores; direct path coefficients for this model appear in Table 2, whereas significant indirect effects are described in the text. Despite the inclusion of parent involvement in this model, maternal occupation ( $\beta = .184$ ) remained a strong predictor of youth's test scores. With the inclusion of parent involvement variables, paternal education ( $\beta = .106$ ) emerged as a significant predictor of youth's test scores. However, this finding for paternal education was the result of a slight change in standard errors between the two models rather than a change in the magnitude of the association; thus, it does not appear that there was a suppression effect. Other predictors of test scores in order of magnitude were parental help with homework ( $\beta = -.174$ ), educational resources in the home ( $\beta = .115$ ), extracurricular instruction ( $\beta = .110$ ), child's gender ( $\beta = -.098$ ), parental-student discussion of school matters ( $\beta = .096$ ), enriching activities ( $\beta = .091$ ), and generational status ( $\beta = -.066$ ). Parent involvement in education appeared to mediate the effects of income and mothers' education on youth's achievement such that after the inclusion of parent involvement variables income and mothers' education were no longer significant predictors of youth's test scores; however, parent involvement in education did not appear to mediate effects of mothers' occupation and fathers' education on achievement.

All six components of parent involvement in education were significantly predicted by SES with percent of variance explained in parent involvement variables ranging from 26% for the educational resources variable to 5% for the involvement in school organizations variable. Although all six parent involvement variables were significantly predicted by family income, only two were significant mediators of the effects of family income on test scores: educational resources ( $\beta = .028$ ), extracurricular instruction ( $\beta = .014$ ); betas in parentheses represent significant indirect effects from income to achievement via each parent involvement variable.

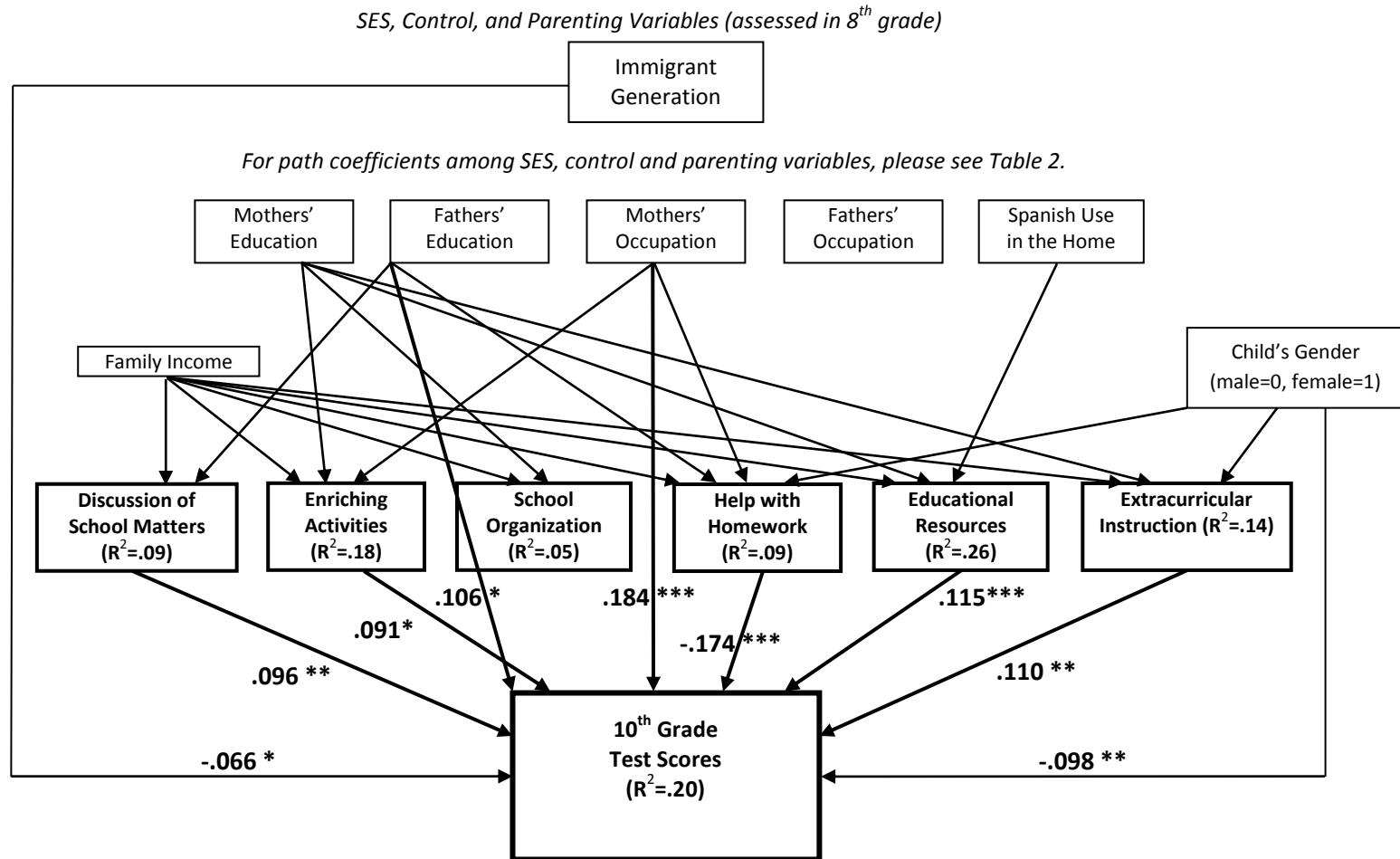


Figure 1. Direct Relationships of Socioeconomic Factors and Controls to 10<sup>th</sup> Grade Test Scores Among Mexican American Youth.



Note: All path coefficients are standardized. Solid lines represent significant relationships (\*\*\*  $p \leq .001$ , \*\*  $p \leq .01$ , \*  $p \leq .05$ ); insignificant paths are shown as dashed lines. SES variables and the outcome are bolded. The model also included covariances among SES and control variables; these relationships are not shown.

Figure 2. Effects of SES and Parent Involvement in Education on 10<sup>th</sup> Grade Test Scores Among Mexican American Youth



*Note:* All path coefficients are standardized. Solid lines represent significant relationships ( $*** p \leq .001$ ,  $** p \leq .01$ ,  $* p \leq .05$ ); although all direct paths to test scores, and between SES and parent involvement variables were estimated, insignificant paths are not shown. Path coefficients between SES, control variables and parent involvement variables appear in Table 2. The model included covariances among parent involvement variables, as well as those among SES and control variables; these relationships are not shown.

Table 2

*Path Coefficients Among SES, Control and Parent Involvement Variables in Model 2*

Regression Path	B	SE	$\beta$	p
<b>10<sup>th</sup> Grade Test scores (<math>R^2=.20</math>) ON</b>				
Discussion of school matters	.1.060	.422	.096	**
Enriching activities	.382	.185	.091	*
Involvement in school organizations	-.159	.256	-.023	
Help with homework	-1.252	.231	-.174	***
Educational resources in the home	.371	.097	.115	***
Extracurricular instruction	1.032	.425	.110	**
Mothers' education	.063	.106	.026	
Fathers' education	.218	.110	.106	*
Mothers' occupation	.545	.131	.184	***
Fathers' occupation	-.001	.144	-.000	
Family income	.196	.126	.074	
Use of Spanish at home	.184	.248	.025	
Immigrant generation	-.671	.333	-.066	*
Child's gender (0=male, 1=female)	-1.408	.555	-.098	**
<b>Discussion of School Matters (<math>R^2=.09</math>) ON</b>				
Mothers' education	.010	.011	.045	
Fathers' education	.022	.010	.115	*
Mothers' occupation	.019	.012	.070	
Fathers' occupation	.005	.016	.017	
Family income	.030	.014	.126	*
Use of Spanish at home	-.005	.036	-.007	
Immigrant generation	.046	.050	.049	
Child's gender (0=male, 1=female)	-.075	.052	-.057	
<b>Enriching Activities (<math>R^2=.18</math>) ON</b>				
Mothers' education	.067	.029	.116	*
Fathers' education	.044	.028	.089	
Mothers' occupation	.111	.035	.158	***
Fathers' occupation	.014	.035	.018	
Family income	.114	.027	.181	***
Use of Spanish at home	-.061	.068	-.035	
Immigrant generation	-.062	.096	-.026	
Child's gender (0=male, 1=female)	.182	.116	.053	
<b>Involvement in School Organizations (<math>R^2=.05</math>) ON</b>				
Mothers' education	.053	.019	.148	**
Fathers' education	-.008	.017	-.026	
Mothers' occupation	.008	.031	.019	
Fathers' occupation	.010	.027	.020	
Family income	.041	.019	.104	*
Use of Spanish at home	.062	.054	.057	
Immigrant generation	.072	.057	.048	
Child's gender (0=male, 1=female)	-.006	.076	-.003	

Table 2 (cont.)

Regression Path	B	SE	$\beta$	<i>p</i>
<b>Help with Homework (<math>R^2=.09</math>) ON</b>				
Mothers' education	-.001	.017	-.004	
Fathers' education	.041	.015	.142	**
Mothers' occupation	.054	.023	.131	*
Fathers' occupation	-.022	.021	-.047	
Family income	.028	.014	.075	*
Use of Spanish at home	.002	.049	.002	
Immigrant generation	.123	.055	.086	*
Child's gender (0=male, 1=female)	-.164	.076	-.082	*
<b>Educational Resources in the Home (<math>R^2=.26</math>) ON</b>				
Mothers' education	.101	.028	.135	***
Fathers' education	.040	.034	.063	
Mothers' occupation	.062	.037	.068	
Fathers' occupation	.065	.051	.061	
Family income	.202	.031	.245	***
Use of Spanish at home	-.384	.084	-.168	***
Immigrant generation	-.002	.152	-.001	
Child's gender (0=male, 1=female)	-.025	.164	-.006	
<b>Extracurricular Instruction (<math>R^2=.14</math>) ON</b>				
Mothers' education	.053	.013	.207	***
Fathers' education	-.001	.012	-.004	
Mothers' occupation	.031	.017	.098	
Fathers' occupation	-.018	.018	-.049	
Family income	.036	.012	.128	**
Use of Spanish at home	-.015	.031	-.019	
Immigrant generation	.070	.044	.065	
Child's gender (0=male, 1=female)	.148	.057	.097	**
<b>Family Income (<math>R^2=.30</math>) ON</b>				
Mothers' education	-.028	.035	-.030	
Fathers' education	.177	.035	.228	***
Mothers' occupation	.213	.048	.191	***
Fathers' occupation	.269	.046	.211	***
Use of Spanish at home	-.484	.088	-.174	***
Immigrant generation	.074	.134	-.019	
<b>Use of Spanish at Home (<math>R^2=.19</math>) ON</b>				
Immigrant generation	-.604	.047	-.43	***
<b>Mothers' Education (<math>R^2=.14</math>) ON</b>				
Immigrant generation	1.555	.133	.367	***
<b>Fathers' Education (<math>R^2=.08</math>) ON</b>				
Immigrant generation	1.380	.159	.279	***
<b>Mothers' Occupation (<math>R^2=.11</math>) ON</b>				
Immigrant generation	1.122	.115	.325	***
<b>Fathers' Occupation (<math>R^2=.02</math>) ON</b>				
Immigrant generation	.405	.157	.135	**
Note: *** $p \leq .001$ , ** $p \leq .01$ , * $p \leq .05$				

Although the specific indirect effects of family income via enriching activities, help with homework, and discussion of school were not significant, each indirect effect was comparable in magnitude to the indirect effect via extracurricular instruction and contributed to the total indirect effect of family income on youth's test scores. The lack of a significant remaining effect of family income suggests that parent involvement variables mediate its effects on test scores. Parent involvement variables also appeared to mediate the effects of mothers' education on test scores (significant indirect effects via educational resources:  $\beta = .016$ , and extracurricular instruction:  $\beta = .023$ ).

### Discussion

This study used a large national data set to examine effects of multiple SES components on Mexican American youth's academic achievement and to examine whether these effects were mediated by parent involvement in education. Study results showed that in Mexican American families socioeconomic factors were predictive of children's academic achievement, which was consistent with findings from other studies with Mexican American and Latino samples (e.g., Portes & Rumbaut, 2001). This study expands that knowledge base not only by demonstrating that various components of SES have distinct effects on youth's achievement, but also by identifying the SES components that were most predictive of Mexican American youth's achievement. In addition, study findings demonstrated that parent involvement in education played an important role in mediating effects of some SES components on youth's achievement.

The combined effect of all SES factors examined in this study was comparable in size to the effect of SES on children's achievement in minority samples estimated in a meta-analysis (Sirin, 2005). Findings presented here show that in Mexican American families, maternal occupation had a much stronger positive effect on youth's achievement than other measures of SES, and exceeded the effect of income, which had the second largest influence on achievement. Paternal and maternal education levels were also positively related to youth's achievement. However, paternal occupation was not directly related to either youth achievement or parent involvement.

#### Parent Involvement in Education Mediating Effects of SES on Achievement

Parent involvement in education played an important role in explaining the effects of some SES components on achievement but not others. Effects of income and mothers' education on youth's

achievement were almost entirely explained by parent involvement factors; however, effects of mothers' occupation and fathers' education were largely unmediated by parent involvement. Family income and mothers' education are two components of SES that have been consistently linked to children's cognitive and academic outcomes (for a review see Bradley & Corwyn, 2002), and the mediation of these effects by parent involvement provides support for the importance of parent involvement in education for transmitting economic advantage and disadvantage to children in Mexican American families. Further, it is also instructive that the strong positive effect of mothers' occupation was largely unexplained by the parent involvement factors examined here. It is possible that Mexican American mothers frame their hard work in terms of their desire for their children to succeed in the future (Bacallao & Smokowski, 2007), which motivates youth to succeed academically; alternatively, mothers' human and social capital may increase through employment, contributing to youth's higher achievement.

Findings regarding pathways from different SES components to youth's achievement showed that in Mexican American families fathers' and mothers' socioeconomic resources related to children's achievement via distinct mechanisms. For example, when fathers had higher levels of education school matters were discussed more frequently in the home and youth received help with homework more frequently; when mothers had higher levels of education there was a greater investment in educational resources, extracurricular instruction, and enriching activities, and there was greater parent involvement with school organizations. These pathways from parents' SES to youth's achievement suggest that mothers and fathers may be engaged in different sets of parent-involvement activities with youth, and that parents are using their individual social and human capital as part of their involvement in their youth's education. Prior studies have described the different roles of mothers and fathers in Mexican American families generally (e.g., Crockett et al., 2007; Parra-Cordona et al., 2008), findings in the present study specifically suggest that mothers and fathers play distinct roles with regard to children's education.

#### Linking SES to Achievement: Family Stress and Parent Investment Models

Both the family stress model and the parent investment model appear to influence parental involvement in youth's education, suggesting that family processes linked to SES are an important source of supports and barriers for adolescents'

academic achievement. However, the specific pathways from SES to achievement via parent involvement, suggest that, as with younger children (e.g., Gershoff et al., 2007), processes associated with parent investment may be more prevalent than processes associated with family stress. For example, pathways from income to achievement are largely mediated by parents investing resources in children's education, such as providing children with educational resources, enriching activities, and extracurricular instruction. Similarly, the effects of mothers' education are mediated by provision of educational resources and extracurricular instruction, suggesting that as the level of maternal education increases, better educated mothers invest more resources in their children's education. However, lower income is associated with less time spent assisting students with homework and engaging with children in enriching activities, which may be the result of parents' stress in response to economic hardship or could be associated with a lack of resources, specifically leisure time. Taken together, these findings suggest that when Mexican American parents are able to invest resources in adolescents' education, academic achievement is enhanced. Thus, access to such resources may be a key limiting factor for the improvement of academic achievement among Mexican American youth.

The finding that parents helping youth with homework was associated with lower achievement scores is consistent with a recent meta-analysis of 50 studies that examined parental involvement in education during middle school, which found a negative association between homework help and achievement (Hill & Tyson, 2009). That study's authors suggested two possible explanations for the association: first, low student achievement may lead to parents helping with homework, or, second, parents assisting adolescents with homework may interfere with youth's autonomy. When interpreting this finding in the present study, readers should note that five other forms of parent involvement in education were included. Parents engaged in one type of involvement were likely to engage in other forms of parent involvement in education; this finding reflects the effect of parents assisting with homework after taking into account other forms of parental involvement.

### **Putting NELS Data Into Context**

Despite being the most current set of publically available, nationally representative data about Mexican American youth's academic achievement, the NELS data used in this study are more than 20 years old. Given the social, political, and demographic changes of the last 20 years, it is important to consider how findings from these data may relate to Mexican

Americans today. The first wave of NELS data, collected in 1988, captured a point in history following 20 years of rapid expansion of Mexican migration to the United States (Durand, Massey, & Charvet, 2000). In the two decades since, migration from Mexico has persisted at a rapid pace, contributing to continued expansion of the Mexican American population in the United States. In 1988, as today, the Mexican American population included a sizeable proportion of migrants born in Mexico (33% in 1988 and 39% in 2009; Lapham, 1993; U.S. Census, 2009). Between 1972 and 2007, national high school drop-out data showed a consistent pattern of disadvantage for Hispanic youth relative to their White and Black counterparts (Laird et al., 2007). Although these drop-out data showed an overall downward trend in drop-out rates for all three racial/ethnic groups, Hispanic youth continued to experience drop-out rates 2 to 4 times higher than those of Black and White youth (Laird et al., 2007). In today's sociopolitical context, Mexican Americans face strong anti-immigrant sentiments as they have in the past. In sum, there may be similarities between the era during which NELS data were collected and today with regard to the immigrant composition of the Mexican American population, the level of discrimination Mexican Americans experience in U.S. society, and the disadvantages Hispanic students experience in education. However, it is difficult to assess all the ways in which data collected in 1988 may or may not reflect Mexican American families' experiences today, and therefore, study findings should be interpreted in light of this limitation. Newer sources of national-level data about Mexican American youth's academic achievement are needed.

### **Study Limitations**

The following study limitations should also be considered when interpreting findings. NELS data excluded students who could not complete assessments in English; therefore, it is likely the findings presented are not representative of Mexican American students with limited-English proficiency. Measures of parent involvement used in this study were not exhaustive, and other parental-involvement practices that were not included may play important roles in youth's academic achievement. Measures used in this study did not allow for the direct assessment of the family stress or parent investment models (e.g., measures of parent stress and parent investment preferences were not available); thus study findings can only be suggestive with regard to the influence of these two explanatory models. Other models such as dissonant acculturation (Portes & Rumbaut, 2001) and acculturation stress, which may be particularly relevant in Mexican American families, were not consid-

ered in these analyses. School and neighborhood factors were also not considered. There were no separate measures for mothers' and fathers' involvement in children's education, which would have enhanced understanding of the distinct parental roles with regard to youth's education. In addition, the majority of parent respondents were mothers, which could bias the reporting of parent involvement activities toward those activities in which the mothers engage more often. Although study findings are suggestive of directions for intervention with regard to parent investment in education among Mexican American families, it is important to keep in mind that this study examined parents' naturally occurring involvement; experimental studies are needed to determine whether changes in parental practices as a result of intervention would have similar impacts on achievement.

### Implications for Research and Practice

Despite limitations, this study provides findings that can inform both future research and interventions to improve achievement of Mexican American youth. Findings demonstrate the importance of assessing multiple components of SES in future research because mothers' and fathers' education levels and occupations have differential effects on youth's achievement, suggesting that parents' individual resources—rather than shared family resources—impact the way in which each parent engages with youth. Although it appears that parent investment plays a more important role in youth's achievement than family stress, further research is needed to explicitly test these models alongside models related to acculturation stress. As previously noted, experimental and intervention studies are needed to examine whether parent involvement processes may be modified to increase Mexican American youth's achievement.

The finding that parent involvement in education is an important explanatory factor for the link between SES and achievement suggests that investing in the human and social capital of Mexican American parents may be a fruitful intervention strategy to improve youth's achievement. Quioco and Daoud (2006) found that Latino parents were very interested in being engaged in their children's education, but did not always know the role schools wanted them to play. Interventions to help parents bridge that gap may improve parent involvement and youth's achievement. Several promising programs that aim to improve achievement and prevent drop out among Latino students include a focus on parent involvement (e.g., Achievement for Latinos through Academic Success and the Parent Institute for Quality Education). These culturally specific programs increase Latino parents' social and human capital in order to increase parent

engagement with schools and increase parent knowledge about pathways to higher education; these programs also help parents provide educational resources for youth (Slavin & Calderon, 2001).

An alternative intervention strategy focuses on providing additional educational resources, such as extracurricular instruction and mentoring, directly to students. This direct approach is part of successful programs such as Upward Bound and Advancement Via Individual Determination or AVID (Slavin & Calderon, 2001). When families lack resources for extracurricular instruction and other educational resources, schools and communities have been able to compensate by providing these resources. Thus, to prevent the social and economic consequences of academic failure among Mexican American youth, local, state, and national policies should provide funding for additional educational resources in schools serving low-income Latino families. Alternatively, resources could be given to families directly. Findings presented here confirm that when Mexican American parents have greater access to economic, social, and human capital they invest these resources into their children's education, which in turn, leads to higher achievement among youth. When families lack such resources, policy makers, communities, and schools need to step in. By working with families and communities to build resources in support of education, social work researchers and practitioners can improve the academic outcomes of Mexican American students and advance the future socioeconomic success of the largest and fastest growing segment of the U.S. population.

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### References

- Allison, P. D. (2003). Missing data techniques for structural equation modeling. *Journal of Abnormal Psychology, 112*(4), 545-557. doi:10.1037/0021-843X.112.4.545
- Altschul, I. (2011). Parental involvement and the academic achievement of Mexican American youths: What kinds of involvement in youths'

- education matter most? *Social Work Research*, 35(3), 159-170.
- Bacallao, M. L., & Smokowski, P. R. (2007). The costs of getting ahead: Mexican family system changes after immigration. *Family Relations*, 56(1), 52-66. doi:10.1111/j.1741-3729.2007.00439.x
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY : Wiley.
- Bollen, K. A., Glanville, J. L., & Stecklov, G. (2001). Socioeconomic status and class in studies of fertility and health in developing countries. *Annual Review of Sociology*, 27(1), 153. doi:10.1146/annurev.soc.27.1.153
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology*, 53(1), 371-399. doi:10.1146/annurev.psych.53.100901.135233
- Butler, S. M., Beach, W. W., & Winfree, P. L. (2008). *Pathways to economic mobility: Key indicators*. Economic Mobility Project, Pew Charitable Trusts. Retrieved from [http://www.economicmobility.org/assets/pdfs/PE\\_W\\_EMP\\_PATHWAYS.pdf](http://www.economicmobility.org/assets/pdfs/PE_W_EMP_PATHWAYS.pdf)
- Carranza, F. D., You, S., Chhuon, V., & Hudley, C. (2009). Mexican American adolescents' academic achievement and aspirations: The role of perceived parental educational involvement, acculturation, and self-esteem. *Adolescence*, 44(174), 313-333. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19764269>
- Chrispeels, J. H., & Rivero, E. (2001). Engaging Latino families for student success: How parent education can reshape parents' sense of place in the education of their children. *Peabody Journal of Education*, 76(2), 119-169. doi:10.1207/S15327930pje7602\_7
- Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology*, 58(1), 175-199. doi:10.1146/annurev.psych.58.110405.085551
- Conger, R. D., Ge, X., Elder, G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development*, 65(2), 541-561. doi:10.2307/1131401
- Crockett, L. J., Brown, J., Russell, S. T., & Shen, Y. (2007). The meaning of good parent-child relationships for Mexican American adolescents. *Journal of Research on Adolescence*, 17(4), 639-668. doi:10.1111/j.1532-7795.2007.00539.x
- Curtin, T. R., Ingels, S. J., Wu, S., & Heuer, R. (2002). *National Educational Longitudinal Study of 1988: Base-year to fourth follow-up data file user's manual* (NCES 2002-323). Washington, DC: U.S. Department of Education, National Center for Educational Statistics. Retrieved from <http://nces.ed.gov/pubs2002/2002323.pdf>
- Driscoll, A. K. (1999). Risk of high school dropout among immigrant and native Hispanic youth. *International Migration Review*, 33(4), 857-875. doi:10.2307/2547355
- Dumka, L., Gonzales, N., Bonds, D., & Millsap, R. (2009). Academic success of Mexican origin adolescent boys and girls: The role of mothers' and fathers' parenting and cultural orientation. *Sex Roles*, 60, 588-599. doi:10.1007/s11199-008-9518-z
- Duncan, G. J., & Brooks-Gunn, J. (2000). Family poverty, welfare reform, and child development. *Child Development*, 71(1), 188-196. doi:10.1111/1467-8624.00133
- Durand, J., Massey, D. S., & Charvet, F. (2000). The changing geography of Mexican immigration to the United States: 1910-1996. *Social Science Quarterly*, 81(1), 1-15. Retrieved from <http://faculty.salisbury.edu/~tjdunn/Intl.Mig.%20Spg.%2003/Durand,%20et%20al-%20ChgGeogMexMig.pdf>
- Feliciano, C. (2001). The benefits of biculturalism: Exposure to immigrant culture and dropping out of school among Asian and Latino youths. *Social Science Quarterly*, 82(4), 865-879. doi:10.1111/0038-4941.00064
- Figueroa-Moseley, C.D.V., Ramey, C. T., Keltner, B., & Lanzi, R. G. (2006). Variations in Latino parenting practices and their effects on child cognitive developmental outcomes. *Hispanic Journal of Behavioral Sciences*, 28(1), 102-114. doi:10.1177/0739986305284036
- Gershoff, E. T., Raver, C. C., Aber, J. L., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development*, 78(1), 70-95. doi:10.1111/j.1467-8624.2007.00986.x
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology*, 60, 549-576. doi:10.1146/annurev.psych.58.110405.085530
- Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and



- motivational model. *Child Development*, 65(1), pp. 237-252. doi:10.2307/1131378
- Guo, G., & Harris, K. M. (2000). The mechanisms mediating the effects of poverty on children's intellectual development. *Demography*, 37(4), 431-447. doi:10.1353/dem.2000.0005
- Hauser, R. M. (1994). Measuring socioeconomic status in studies of child development. *Child Development*, 65(6), 1541-1545. doi:10.2307/1131279
- Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development*, 75(5), 1491-1509. doi:10.1111/j.1467-8624.2004.00753.x
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45(3), 740-763. doi:10.1037/a0015362
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55. doi:10.1080/10705519909540118
- Ingels, S. J., Scott, L. A., Lindmark, J. T., Frankel, M. R., & Myers, S. L. (1992). *National Educational Longitudinal Study of 1988: First follow-up student component data file user's manual* (NCES 92-030). Washington, DC: U.S. Department of Education, National Center for Educational Statistics. Retrieved from <http://nces.ed.gov/pubs92/92030.pdf>
- Kao, G., & Thompson, J. S. (2003). Racial and ethnic stratification in educational achievement and attainment. *Annual Review of Sociology*, 29(1), 417-442. doi:10.1146/annurev.soc.29.010202.100019
- Laird, J., DeBell, M., Kienzl, G., & Chapman, C. (2007). *Dropout rates in the United States: 2005* (NCES 2007-059). Jessup, MD: U.S. Department of Education, National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007059>
- Landale, N. S., Oropesa, R. S., & Llanes, D. (1998). Schooling, work, and idleness among Mexican and non-Latino White adolescents. *Social Science Research*, 27, 457-480. doi:10.1006/ssre.1998.0631
- Lapham, S. J. (1993). *1990 Census of population: Persons of Hispanic origin in the United States*. Washington, DC: U. S. Department of Commerce. Retrieved from <http://www.census.gov/prod/cen1990/cp3/cp-3-3.pdf>
- Linver, M. R., Brooks-Gunn, J., & Kohen, D. E. (2002). Family processes as pathways from income to young children's development. *Developmental Psychology*, 38(5), 719-734. doi:10.1037/0012-1649.38.5.719
- Martinez, C. R., Jr., DeGarmo, D. S., & Eddy, J. M. (2004). Promoting academic success among Latino youths. *Hispanic Journal of Behavioral Sciences*, 26(2), 128-151. doi:10.1177/0739986304264573
- Mayer, S. E. (1997). *What money can't buy: Family income and children's life chances*. Cambridge, MA: Harvard University Press.
- Morales, M. C., & Saenz, R. (2007). Correlates of Mexican American students' standardized test scores: An integrated model approach. *Hispanic Journal of Behavioral Sciences*, 29(3), 349. doi:10.1177/0739986307302176
- Officer, L. H., & Williamson, S. H. (2010). Measures of worth. Retrieved from [www.measuringworth.com/worthmeasures.php](http://www.measuringworth.com/worthmeasures.php)
- Orfield, G., Losen, D., Wald, J., & Swanson, C. (2004). *Losing our future: How minority youth are being left behind by the graduation rate crisis*. Cambridge, MA: The Civil Rights Project at Harvard University. Contributors: Advocates for Children of New York, The Civil Society Institute. Retrieved from <http://www.urban.org/url.cfm?ID=410936>
- Parra-Cardona, J., Córdova, D., Holtrop, K., Villarruel, F. A., & Wieling, E. (2008). Shared ancestry, evolving stories: Similar and contrasting life experiences described by foreign born and U.S. born Latino parents. *Family Process*, 47(2), 157-172. doi:10.1111/j.1545-5300.2008.00246.x
- Pew Hispanic Center. (2011). *Statistical portrait of Hispanics in the United States, 2009*. Retrieved from <http://pewhispanic.org/factsheets/factsheet.php?FactsheetID=70>
- Plunkett, S. W., & Bamaca-Gomez, M. Y. (2003). The relationship between parenting, acculturation, and adolescent academics in Mexican-origin immigrant families in Los Angeles. *Hispanic Journal of Behavioral Sciences*, 25(2), 222-239. doi:10.1177/0739986303025002005

- Plunkett, S. W., Henry, C. S., Houlberg, B. J., Sands, T., & Abarca-Mortensen, S. (2008). Academic support by significant others and educational resilience in Mexican-origin ninth grade students from intact families. *Journal of Early Adolescence*, 28(3), 333-355. doi:10.1177/0272431608314660
- Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research*, 77, 373-410. doi:10.3102/003465430305567
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Berkeley: University of California Press. <http://www.ucpress.edu/book.php?isbn=978052028481>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891. doi:10.3758/BRM.40.3.879
- Quiocho, A.M.L., & Daoud, A. M. (2006). Dispelling myths about Latino parent participation in schools. *Educational Forum* 70(3), 255-267. doi:10.1080/00131720608984901
- Roscigno, V. J. (2000). Family/School inequality and African-American/Hispanic achievement. *Social Problems*, 47(2), 266-290. doi:10.1525/sp.2000.47.2.03x0291e
- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research*, 75, 417-453. doi:10.3102/00346543075003417
- Slavin, R. E., & Calderon, M. (2001). *Effective programs for Latino students*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Stearns, E., Moller, S., Blau, J., & Potochnick, S. (2007). Staying back and dropping out: The relationship between grade retention and school dropout. *Sociology of Education*, 80, 210-240. doi:10.1177/003804070708000302
- U.S. Census Bureau. (2009). *Educational attainment of the population 25 years and over by sex and Hispanic origin type: 2008*. Retrieved from <http://www.census.gov/population/www/socdemo/hispanic/cps2008.html>
- Yeung, W. J., Linver, M. R., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. *Child Development*, 73, 1861-1879. doi:10.1111/1467-8624.t01-1-00511

Received July 15, 2011

Revision received October 16, 2011

Revision received November 1, 2011

Accepted November 2, 2011

Published online January xx, 2012

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**APA Citation for this article:**

Altschul, I. (2012). Linking socioeconomic status to Mexican American youth's academic achievement through parent involvement in education. *Journal of the Society for Social Work and Research*, 3, 13-30. doi:10.5243/jsswr.2012.2