Published in final edited form as:

J Appl Dev Psychol. 2014 ; 35(2): 102–110. doi:10.1016/j.appdev.2013.11.005.

Generational Patterns in Mexican Americans' Academic Performance in an Unwelcoming Political Context

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Abstract

Research has shown that immigrant students often do better academically than their U.S.-born peers from the same ethnic group but it is unclear whether this pattern holds for Mexican Americans. We examined the academic performance of four generations of Mexican American students from fifth to 10th grade looking for generation differences and explanations for them. Using data from 749 families, we tested a model with fifth grade variables that differed by generation as potential mediators linking student generation to 10th grade academic performance. Results showed that immigrants were academically behind at fifth grade but caught up by seventh. Only economic hardship mediated the long term relationship between student generation and 10th grade academic performance; maternal educational expectations and child language hassles, English usage, discrimination, and mainstream values helped explained the early academic deficit of immigrant children. The results identified potential targets for interventions to improve Mexican American students' academic performance.

Keywords

academic performance; discrimination; economic hardship; English usage; Mexican Americans; values

Over the past two decades, researchers, educators, and policy makers have given increasingly close attention to the academic performance of Mexican Americans for two reasons. First, Latinos are the largest ethnic minority group in the United States (U.S.) with Mexican Americans accounting for about two-thirds of the Latino population as well as 15.7% of children enrolled in U.S. schools (Motel & Patten, 2012). A substantial portion of the Mexican American population was not born in the U.S.; 29% of Mexican origin adults (Motel & Patten, 2012) and 13% of Mexican origin children are immigrants (The Urban Institute, 2012). Second, Mexican Americans have higher rates of academic failure and dropout than European Americans, African Americans, and other Latinos (dropout rate of 25% versus 7%, 12%, and 21%, respectively; Pew Hispanic Center, 2004). Academic problems of this magnitude are a serious issue given the long term individual and societal

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costs of the associated increased risk of physical and mental health problems (Pleis, Ward, & Lucas, 2010), reduced employment opportunities and earning power (Center for Labor Market Studies, 2009), and increased rates of incarceration (Harlow, 2003).

Several researchers have reported evidence, often from studies using large nationally representative samples, of an immigrant paradox in academic performance. These studies show that first generation (immigrant) children (in some studies, immigrants and children born to immigrants) have stronger school attachments, higher academic motivation, and better academic performance than later generation peers from the same ethnic group (Fuligni, 1997; Han, 2012; C. Suárez-Orozco, M. Suárez-Orozco, & Todorova, 2008). Researchers also have reported that, although first generation children may lag behind in early academic performance (perhaps because of language), they may catch up quickly to the academic performance of later generation children because of their motivation to succeed (e.g., Crosnoe, 2006, 2012; Han, 2012; Palacios, 2012; C. Suárez-Orozco et al., 2008). Some scholars have argued that children of immigrants may be best situated for academic success given that they often share the motivation and work ethic of first generation children but have better English skills (e. g., Conger & Atwell, 2012).

Despite considerable evidence in support of an immigrant paradox in academic performance, results often have differed between, and even within, studies by developmental status, ethnic group, and geographic location. Evidence of an immigrant academic paradox has been more likely when studying adolescents rather than younger children (Crosnoe, 2012; Palacios, 2012; C. Suárez-Orozco et al., 2008), whereas evidence of the rapid “catching up” pattern among immigrants has been more likely when studying younger children rather than adolescents (Palacios, 2012; C. Suárez-Orozco et al., 2008). Moreover, immigrant advantages may emerge only when researchers statistically control for economic disadvantage; immigrants may perform as well as or better than their U.S.-born peers only when compared to others in the same social strata (Crosnoe, 2012). Finally, there is evidence that the relative academic performance of students by generation may vary by geographic location perhaps because of (a) the local population density of immigrants or members of their ethnic group, (b) the extent of community-wide economic disadvantage, and/or (c) the degree to which a community welcomes (or resists) the arrival of immigrants (e.g., Conger & Atwell, 2012; Portes & Rumbaut, 2001).

Although relatively few studies have focused on Latinos generally or Mexican Americans specifically, studies that included these groups often failed to find evidence of an immigrant paradox (e.g., Conger & Atwell, 2012; Crosnoe, 2006, 2012; Fuligni, 1997; Glick & Holman-Marriott, 2007). Moreover, other than indicators of social class (which is difficult to assess reliably for immigrants) and English language proficiency, studies of immigrants' academic performance rarely have included variables related to immigration or acculturation experiences that might account for generation differences. Similarly, studies rarely have examined pathways linking student generation to academic performance which would provide guidance for interventions. In this study, we focused on the academic performance of four generations of Mexican American students in one of the least accepting U.S. environments for Latinos generally and Latino immigrants particularly. Our goal was to identify characteristics and experiences of Mexican American students and their families that might help explain the relationship between students' generation and academic performance longitudinally.

The Current Study

This study was conducted in Arizona, a state that has been a focal point for anti-immigrant/Latino sentiment and policies for more than a decade. Children in this study entered first

grade in 2000 or 2001 and most graduated by the spring of 2013. Since entering first grade, several political and legal events impacted these students' educational and social contexts. In 2000, a law was passed banning bilingual education (Corella, 2000). In 2006, a law proclaimed the state's official language to be English (The Washington Times, 2006), although a similar law had been enacted years earlier and was still in effect. In 2010, new laws (a) banned the teaching of ethnic studies (classes focused primarily on the Latino experience; Santa Cruz, 2010), and (b) targeted Latinos by requiring police to ask for documentation of legal residency when officers suspected individuals to be in the U.S. illegally (Archibold, 2010). During this time, Arizona severely restricted non-English speaking students' access to English Language Learners' (ELL) services, a practice that ended only in 2012 (Ryman, 2012). Finally, for several years the sheriff of the most populated county in Arizona periodically conducted headline generating "crime suppression sweeps", raids designed to round up undocumented immigrants, almost exclusively Latinos (Hensley, 2012). Therefore, this study examined Mexican American immigrant students' academic performance relative to that of U.S.-born Mexican Americans in an environment that was unsupportive of the educational advancement of either in several ways.

This study was guided by the integrative model of developmental competencies of minority children which stresses the importance of assessing the influence of contextual variables such as social class, culture, and ethnicity (García Coll et al., 1996). Of course, minority children's development is affected by all or most of the same factors that influence development in the majority population. Our understanding of the development of minority children, however, will be incomplete unless we also study factors unique to their experiences as minorities (e.g., cultural beliefs, discrimination). The integrative model also encourages researchers to use longitudinal designs and assess intra-group variability.

While acknowledging the importance of demographic variables in helping us understand generation differences in academic performance, we avoided using common indicators of socioeconomic status (e.g., family income, parent education) which have been prominent in prior studies. The education systems of Mexico and the U.S. are not identical; access to a free education, particularly at the secondary level, is easier in the U.S. and there are different intensities of learning at different levels in the two systems (Roosa, Deng, Nair, & Burrell, 2005). Furthermore, the value of any particular level of education in Mexico to an immigrant parent's earning potential in the U.S. is less than is a similar level of education acquired in the U.S. Similarly, negotiating the education system in Mexico does not help immigrant parents understand U.S. schools' expectations. Finally, measuring income of immigrants who sometimes rely on day labor, often get paid in cash on a daily basis or at irregular intervals, and sometimes do not receive end of the year reports of their cumulative income (i.e., W2 forms) is much less reliable than getting this information from persons with steady jobs, regular paychecks, and annual reports of total income from their employers. Instead of relying on these questionable data, we assessed the adequacy of financial resources by asking families whether their finances met their basic monthly financial needs (i.e., economic hardship).

Here we briefly summarized our systematic search for variables that might contribute to variation in Mexican American students' academic performance by generation. Because of space limitations, we did not describe the measures used or provide statistical results, but these are available online at http://psychology.clas.asu.edu/sites/default/files/supplemental_file_for_generational_patterns_in_mexican_americans.pdf. Using variables available from a longitudinal study of a diverse sample of Mexican American families, we generated a list of variables that potentially could differentiate the experiences of these families by generation according to the integrative model (Garcia Coll et al., 1996) and previous research (e.g., Fuligni, 1997; Table 1). Although we chose several variables that

had been included in earlier studies (indicated by an * in the table), we purposely sought out variables not yet examined. These included family variables (e.g., family cohesion), student variables (e.g., perceived discrimination), classroom variables (e.g., teacher reports of on-task behavior), cultural variables (e.g., mainstream values), and community variables (e.g., the percent of foreign born residents). As an example of the logic behind these choices, we expected immigrant students to have higher levels of both family cohesion and traditional cultural values while we expected later generation students to have higher mainstream U.S. cultural values (e.g., Marin & Marin, 1991). Similarly, classroom on-task behavior and school attachment were chosen given research findings that immigrant students see getting an education as more worthwhile, are motivated to work harder in school, and show greater respect for their teachers than later generation students (e.g., Fuligni, 1997).

Given the extensive list of variables chosen in the first step (Table 1, column 2), it was not possible to test all as mediators in a single model. Only variables that differed by student generation *and* were significantly related to fifth, seventh, or 10th grade academic performance, a requirement for mediation (MacKinnon, 2008), could mediate the relationship between generation and academic performance. Thus, we used one-way analysis of variance (ANOVA) and chi-square to choose variables that significantly differed by student generation (Table 1, Column 3). Next, we chose variables from this list that were correlated with fifth, seventh, or 10th grade academic performance (Table 1, Column 4). Because both mother and father reports of depression and educational expectations met selection criteria and there was neither theoretical nor empirical evidence in favor of one reporter over the other, we used mother reports so that sample size was maximized (mother, but not father, participation was an eligibility requirement for the study). Thus, only variables that had differences across generations *and* were correlated with academic performance (Table 1, column 4) were used as potential mediators in the model to explain generation differences in Mexican American students' academic performance. Finally, we placed these variables (column 4) in a model as potential mediators linking student generation to academic performance in 10th grade (Figure 1). The model shows that generation would be significantly related to mediator variables that, in turn, would be significantly related to grades at 10th grade. The model shows that we also expected generation, via the potential mediators, to be significantly related to the control variables, teachers' ratings of student's academic performance in fifth grade and students' grades in seventh grade.

Method

Participants

This study used data from a longitudinal study of the roles of culture and context in the adaptation of 749 Mexican American families from the Phoenix, Arizona metropolitan area (Roosa et al., 2008). This sample was very diverse in terms of social class, immigration status, language preference, and living contexts and very similar to the census description of the Mexican origin population in the area. Data were collected from parents, students, and students' teachers when children were in the fifth (T1), seventh (T2), and 10th (T3) grades. Forty-nine percent of children (M age fifth grade = 10.9, SD = .46; M age seventh grade = 12.8, SD = .45; M age 10th grade = 15.8, SD = .45) were female, 82% were interviewed in English at fifth grade, and over 70% were born in the U.S. Moreover, 29% of these children were first generation (M age U.S. arrival = 5.1), 43% were second generation (parents were immigrants but child born in U.S.), 10% were third generation (parents and child born in U.S.), 18% were fourth generation and beyond (grandparents also born in the U.S.; called fourth generation for convenience). On average, mothers (M age fifth grade = 35.9, SD = 5.89) had 10.3 years of education, 30% completed interviews in English, and 74% were born

in Mexico. At fifth grade, families' reported a median annual income between \$25,001 and \$30,000; the median income for Arizona was \$44,282 and for Latinos was \$34,743 (U.S. Census Bureau, 2005).

At seventh grade, 710 families were re-interviewed. Attrition analyses indicated no differences on child academic performance, child or mother demographic characteristics (i.e., gender, generation, interview language, marital status, age, and education), or economic hardship between families who did ($n = 710$) and did not participate at the second assessment. Only one significant difference emerged; students who did not participate at seventh grade reported fewer externalizing symptoms at fifth grade, $t(747) = 2.75, p < .05$.

At 10th grade, 641 families were re-interviewed and attrition analyses indicated significant differences in nativity, maternal education and employment status, and academic performance between families who did and did not participate ($n = 108$). Families with U.S.-born children or mothers were more likely to participate at 10th grade than families with Mexico-born children or mothers, $\chi^2(1) = 3.982, p < .05$ and $\chi^2(1) = 4.602, p < .05$, respectively; families with mothers with higher levels of education ($M = 10.48, SD = 3.65$) were more likely to participate at 10th grade than families with mothers with lower levels of education ($M = 9.48, SD = 3.72$), $t(746) = -2.633, p < .01$; families with mothers who worked at least 20 hours per week at fifth grade were more likely to participate at 10th grade than families with mothers who worked less than 20 hours per week, $\chi^2(1) = 10.649, p < .01$; and families with children who had higher levels of fifth grade academic performance were more likely to participate at 10th grade than families with children who had lower levels of fifth grade academic performance, $t(720) = 2.28, p < .05$ (Note: There was not a significant interaction between attrition status and generation meaning that the higher attrition of lower performing students was evenly distributed across the generations).

Procedures

A complete description of procedures appears in Roosa et al (2008); here we highlighted key components. Purposive and random sampling techniques were used to identify 47 different schools (e.g., public, charter, and religious) representing the diverse neighborhoods in which Mexican American families resided. English and Spanish language recruitment packets were sent home with every fifth grade child in each school and 86% were completed and returned. Interested families were contacted for screening. Eligibility requirements included: child attending the school; mother and child agreed to participate; mothers and fathers were the child's biological parents; the mother, father, and child were of Mexican descent; and the child was not severely learning disabled. Of the 1,025 families eligible for participation and recruited for interviews, over 70% of both English and Spanish speaking families participated ($n = 749$).

Interviewers completed 40 hours of training, were bicultural, and most were bilingual. Computer assisted personal interviews took place at families' homes. Interviewers read and explained consent and assent forms and answered questions in compliance with the University's Institutional Review Board. Immediately after signing consent and assent forms, each participating family member was given a cash incentive (fifth grade = \$45; seventh grade = \$50; 10th grade = \$55). Family members then were interviewed separately out of hearing range of each other in the language of their preference with interviews averaging 2.5 hours. Interviewers read all questions and responses aloud to avoid problems due to variations in literacy.

Measures

Demographics—Mothers reported their age, marital status, language preference, and the nativity of extended family members. Students reported their language preference.

Student generation—We used mothers' reports of extended family members' nativity to compute students' generation ranging from 1 = *first generation* to 4 = *fourth generation and beyond*. A participant was coded as first generation if they, their parents and grandparents were born in Mexico. A participant was coded as second generation if they were born in the U. S. and their parents and grandparents were born in Mexico. A participant was coded as third generation if they and their parents were born in the U. S. and their grandparents were born in Mexico. A participant was coded as fourth generation (technically fourth generation or beyond) if they, their parents, and their grandparents, were born in the U. S. Participants whose background deviated slightly from these coding rules (i.e., when a grandparent was born in another Latin American country) were assigned the nearest appropriate code.

Economic hardship—Mothers responded to 20 economic hardship items (Conger & Elder, 1994). Two items assessed an inability to make ends meet (“Think back over the past 3 months and tell us how much difficulty you had with paying your bills” [responses ranged from 1 = *a great deal of difficulty* to 5 = *no difficulty at all* with responses reverse coded]), seven items assessed not enough money for necessities (“Your family had enough money to afford the kind of home you needed” [responses ranged from 1 = *not at all true* to 5 = *very true*, with responses reverse coded]), 9 items assessed economic cutbacks (“In the last 3 months, has your family changed food shopping or eating habits a lot to save money?” [responses were 1 = *yes* and 2 = *no*]), and two items assessed financial strain (“In the next three months, how often do you expect that you and your family will experience bad times such as poor housing or not having enough food?” [responses ranged from 1 = *almost never or never* to 5 = *almost always or always*]). A total economic hardship score was computed by standardizing each score and summing ($\alpha = .83$). This scale has been shown to be reliable and valid for Mexican American families (e.g., Parke et al., 2004). Higher scores indicated higher levels of economic hardship.

Depression—Mothers reported their depression symptoms with the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977). This 20-item scale ($\alpha = .91$; e. g., “You were bothered by things that usually don't bother you”) had responses ranging from 1 = *rarely or none of the time* to 4 = *most or all of the time*. The CES-D was shown to be reliable and valid in research with general, clinical, and Latino populations (Moscicki, Locke, Rae, & Boyd, 1989; Radloff, 1977). Higher scores indicated more symptoms.

Educational expectations—Mothers rated their educational expectations for the target children with the question “How far do you expect (*target child name*) to go in school?” with responses ranging from 1 = *first grade* to 15 = *advanced or professional degree*.

Language hassles—Students reported on language hassles with the 7-item language hassles subscale of the Multicultural Events Scale for Adolescents (Gonzales, Tein, Sandler, & Friedman, 2001; (“During the past 3 months, other kids put you down for not speaking English or not speaking it well”) Responses (1 = *happened* or 2 = *did not happen*) were used to compute a count score. Validity for this subscale was established with an ethnically mixed sample of urban adolescents. Note that Cronbach's alpha is not appropriate for event-count scales.

English usage—Students reported their English usage with four items (“How often or much do you speak English?” from the Acculturation Rating Scale for Mexican Americans – II (Cronbach's $\alpha = .71$; Cuellar, Arnold, & Maldonado, 1995) with responses 1 = *not at all* to 5 = *extremely often or almost always*. Construct validity for the ARSMA-II was established with a multi-generation (generations 1-5) sample. Higher scores indicated greater English usage.

Perceived Discrimination—Students reported their perceptions of discrimination using a 17-item measure developed by Johnston & Delgado, 2004 with items derived from two conceptually overlapping measures of racism (Hughes & Dodge, 1997) and sexism (Landrine, Klonoff, Gibbs, Manning, & Lund, 1995). Items judged not to be meaningful for children or Latinos were removed. A total discrimination score ($\alpha = .74$) was computed from two subscales (peer discrimination [“Kids at school think bad things about Mexicans or Mexican Americans”] and teacher discrimination [“Your teachers dislike Mexicans or Mexican Americans”]); depending on the question, responses were given on one of two five-point Likert scales (1 = *not at all* to 5 = *very true* or 1 = *almost never or never* to 5 = *almost always or always*). The original scales had established validity with African American (Hughes & Dodge, 1997) and female samples (Landrine et al., 1995). Higher scores indicated greater discrimination.

Mainstream values—Students rated beliefs in U.S. mainstream values with nine items from the Mexican American Cultural Values Scale (MACVS; Knight et al., 2010). We summed the self-reliance (five items, “Parents should encourage children to solve their own problems”) and personal achievement and competition subscales (four items, “Personal achievements are the most important things in life”) to compute a total score ($\alpha = .73$; responses ranged from 1 = *not at all* to 5 = *completely*. Validity for the MACVS was established with a large, diverse multi-generation sample. Higher scores indicated greater mainstream values.

Grades—At fifth grade, teachers ranked students' academic performance relative to their peers because participating schools did not have compatible grading methods. The scale ranged from 1 = *far below average/bottom 1/5 of the class* to 5 = *excellent/top 1/5 of the class*. At seventh and 10th grades, English and math teachers reported students' grades (i.e., “If you were giving final grades today, what grade would you give this student for your course”) from 1 = *A* to 5 = *E/F*; scores were reverse coded and averaged with higher scores reflected higher grades.

Analytic Plan

We tested a structural equation model (SEM) with student generation as the independent variable (coded as three dummy variables with first generation as the reference group), and academic performance in 10th grade as the outcome (while controlling for fifth and seventh grade academic performance; Figure 1). We also included fifth and seventh grade academic performance as mediators between the hypothesized fifth grade mediators and 10th grade academic performance to learn whether the mediators explained early differences in academic performance. Analyses were conducted in SPSS 20 (IBM Corp, 2011) and Mplus 6.1 (Muthén & Muthén, 1998-2011). An advantage of SEM is that it simultaneously estimates all paths in a model while controlling for the influence of all other variables. To handle missing data, parameters were estimated using full-information maximum-likelihood (Enders, 2010). Several indices (comparative fit index [CFI], root-mean-square-error of approximation [RMSEA], and standardized root-mean-square residual [SRMR]) were examined to evaluate model fit. Good (acceptable) fit was reflected by a CFI > .95 (.90), RMSEA < .05 (.08), and SRMR < .05 (.08; Hu & Bentler, 1999; Kline, 2005). We tested for

mediation using the percentile bootstrap method and concluded mediation paths were significant when the 95% confidence limits of the specific indirect effects did not include zero (MacKinnon, Lockwood, & Williams, 2004). To account for nonnormality of data, the maximum likelihood robust estimator was used.

Results

Preliminary Analyses

Descriptive statistics and correlations are presented in Table 2. At fifth grade, student generation was negatively correlated with economic hardship, maternal depression, maternal educational expectations, student language hassles, student discrimination, and student mainstream values and positively correlated with student English usage and classroom ranks. Student generation was not significantly correlated with grades at seventh and 10th grade. Economic hardship, maternal depression, and student language hassles at fifth grade were negatively correlated with fifth grade classroom ranks and student grades at seventh and 10th grade, whereas fifth grade maternal educational expectations were positively correlated with fifth grade classroom ranks and student grades at seventh and 10th grade. Student English usage at fifth grade also was positively correlated with fifth grade classroom ranks, but unrelated to student grades at seventh and 10th grades. Academic performance variables in fifth, seventh, and 10th grades were positively correlated with one another.

ANOVAs of Grades by Student Generation

We performed three separate one-factor ANOVAs to assess whether there were significant generation differences in academic performance at fifth grade. Results indicated significant differences in average fifth grade classroom ranks, $F(3, 715) = 6.95, p < .001, \omega^2 = .02$ (Figure 2). Tukey post hoc tests indicated that, on average, first generation students' fifth grade classroom ranks ($M = 2.86, SD = 1.30$) were significantly lower than those of second ($M = 3.35, SD = 1.31$), third ($M = 3.42, SD = 1.29$), and fourth generation ($M = 3.31, SD = 1.27$) students. There were no significant differences in grades at seventh and 10th grade by generation; by seventh grade first generation students had caught up to later generation students and all were on a similar downward trajectory at 10th grade.

Longitudinal Mediational Model of Student Generation Predicting Grades

Because the model was fully saturated, the initial test of model fit could not be evaluated meaningfully. Thus, we set the nonsignificant associations between residual variances of maternal education expectations and student language hassles to zero as suggested by modification indices. The resulting model fit well, $\chi^2(7) = 9.97, p = .19$; CFI = 1.0; RMSEA = .02; SRMR = .02 (Figure 3). Several indirect (mediated) relationships between the student generation dummy variables and grades at 10th grade emerged from application of the percentile bootstrapping method (Table 3). Only one mediator was directly related to student grades at 10th grade. Mothers of first generation students reported higher economic hardship at fifth grade than mothers of second, third, and fourth generation students; economic hardship, in turn, negatively predicted student grades in 10th grade when prior academic performance was controlled.

All other mediation relationships involved multiple, sequential steps with the effects going from generation dummy variables through a proposed mediator, and then through the control variables (i.e., fifth grade academic ranks, seventh grade student grades) to 10th grade academic performance. For example, mothers of fourth generation students' reported lower educational expectations than mothers of first generation students' which, in turn, were positively related to 10th grade student grades through fifth grade classroom ranks and seventh grade student grades. Similarly, second, third, and fourth generation students

reported fewer language hassles than first generation students which, in turn, was negatively related to fifth grade classroom ranks which positively predicted seventh and 10th grade student grades. Additionally, in comparison to first generation students, second, third, and fourth generation students reported greater English usage which, in turn, was positively related to fifth grade classroom ranks, which positively predicted seventh and 10th grade student grades. Finally, second, third, and fourth generation students also perceived less discrimination and reported lower mainstream values at fifth grade compared to first generation students and, in turn, perceived discrimination and mainstream values were negatively related to fifth grade classroom ranks, which positively predicted seventh and 10th grade student grades. In contrast, although, mothers of third and fourth generation students' reported lower levels of depression than mothers of first generation students, mothers' depression was *not* significantly related to fifth grade classroom ranks, or student grades at seventh or 10th grade. That is, the relations between generation dummy variables and grades at 10th grade were significantly mediated by fifth grade economic hardship, student English usage, student perceived discrimination, student mainstream values, classroom ranks, and seventh grade student grades, but not by maternal depression.

Post Hoc Tests

We ran post hoc tests to eliminate competing hypotheses. Specifically, we examined whether the lack of long term mediation for any mediator other than fifth grade economic hardship was due to colinearity among the mediator variables. To do this, we evaluated the model with one potential mediator at a time, but no other cases of long term mediation occurred. Similarly, to see if the pattern of mediation results was due to the use of prior academic performance as mediator variables, we ran the model with fifth grade classroom ranks and seventh grade student grades solely as control variables (not mediators) and still fifth grade economic hardship was the only long term mediator.

Discussion

Given both the inconsistencies (e.g., support versus non-support) and complexities (e.g., various developmental levels and ethnic groups) of previous research findings in regards to an immigrant paradox in academic performance, this study examined *how* Mexican American students' generation might impact their academic performance from the fifth through 10th grades. We considered a broad array of variables that theoretically could have explained why generation differences in academic performance might occur and selected variables that (a) significantly differed by student generation and (b) were significantly related to academic performance. The variables that met these criteria at fifth grade were tested as potential mediators between student generation and academic performance at the 10th grade, controlling for fifth and seventh grade academic performance (i.e., we conducted strong tests of mediation requiring longitudinal data). Because this longitudinal study relied on data from a research program with a primary purpose of understanding the effects of Mexican American families' immigration and acculturation experiences, it was well suited to identify processes that could help explain how generation might be related to Mexican Americans students' academic performance. Unlike prior studies, we formally tested potential mediators to better understand the relationship between generation and academic performance. Moreover, previous research typically focused exclusively on a final indicator of academic performance; the model we examined simultaneously looked at generation effects on earlier grades as well. More specifically, we identified *processes* that linked student generation to academic performance in the fifth grade with effects that continued to 10th grade. Overall, the approach used should provide useful information for interventions.

Results showed that, although Mexican immigrant students were significantly academically behind their U.S.-born Mexican American peers in the fifth grade, this difference was no longer present by the seventh grade. Although immigrant students had caught up to the academic performance of their non-immigrant peers by seventh grade, this improvement did not continue beyond that point; all generations showed a decline in academic performance in seventh and 10th grades. These results were consistent with prior reports which found no evidence of an immigrant paradox for Mexican Americans specifically or Latinos generally (e.g., Conger & Atwell, 2012; Glick & Holman-Marriott, 2007).

Further, fifth grade economic hardship was the only variable that significantly mediated the long term relationship between student generation and changes in academic performance from fifth to 10th grade. Indicators of economic well-being commonly have been shown to be related to students' academic success (e.g., Crosnoe, 2012) and the current study demonstrated the persistence of this relationship. Mothers of later generation students reported less economic hardship at fifth grade than mothers of immigrant students, but economic hardship was related to poorer academic performance at 10th grade for all students.

In addition, several significant indirect effects emerged between student generation and 10th grade academic performance via sequential mediation pathways (i.e., through a mediator *and* fifth and seventh grade academic performance). That is, fifth grade maternal educational expectations and student language hassles, English usage, perceived discrimination, and adherence to mainstream values explained some of the differences in academic performance between generations at fifth grade. These variables were related to 10th grade academic performance through their relationships with fifth and seventh grade academic performance. The relatively weak relationships between academic performance from fifth to seventh grade and from seventh to 10th grade suggested that early influences from these mediators almost disappeared between seventh and 10th grade; immigrant students caught up with their peers by seventh grade despite early challenges to their academic success (cf. Crosnoe, 2006, 2012; Han, 2012; Palacios, 2012; C. Suárez-Orozco et al., 2008).

Parent educational expectations only differentiated first and fourth generation students and were not related directly to long term changes in students' academic performance. However, the higher educational expectations of mothers of immigrant students were positively related to fifth grade class rankings, possibly providing somewhat of a compensatory effect via encouragement and support for immigrants dealing with language hassles and perceived discrimination experiences. Interestingly, adherence to mainstream values was higher among immigrants than second, third, and fourth generation students perhaps reflecting the motivation and drive for individual success reflected by immigrants' choices to accept the challenges associated with immigration (Portes & Rumbaut, 2001; Suárez-Orozco, 2008). Another possible explanation for this within-group difference may be the rejection of mainstream society by U.S.-born Mexican Americans particularly those who remain in poverty (e.g., Suárez-Orozco, 1991). However, contrary to expectations, higher adherence to mainstream values, the values emphasized in U.S. classrooms, was related to poorer fifth grade class rankings after all other variables in the model were accounted for. More research is needed to explain this result.

Fifth-grade student English usage and language hassles differentiated first generation students from all other generations, with first generation students using less English and having more hassles, as expected. Moreover, English usage (positive) and language hassles (negative) were significantly related to 10th grade academic performance through their influences on early academic performance, but not enough to maintain early differences in academic performance. It is not surprising that both living and attending schools in the U.S.

for a greater number of years would increase student English usage while reducing their experiences with language hassles or that weaker English language skills would be related to lower academic performance. It is extremely concerning, however, that reduced English usage along with the persistence of language hassles among immigrants significantly contributed to lower academic performance as late as fifth grade with some residual effects continuing to 10th grade. This delay in adapting to the English language is most likely in large part due to the reduced availability of ELL services in these students' early school years.

Consistent with prior research (e.g., DeGarmo & Martinez, 2006), this study's results showed that Mexican American students' perceived discrimination at fifth grade was related to lower levels of fifth grade academic performance with some residual effects through 10th grade. Immigrants reported more perceived discrimination than second, third, and fourth generation students, which may be related to the political context or because their poorer English abilities or stronger accents generated more negative attention from their peers and teachers. However, results indicated that perceived discrimination did not contribute to *differences* in academic performance at 10th grade. This could be due to perhaps immigrant students learning better methods for coping with discrimination from their later generation peers. Similarly, it is possible that other factors (e.g., academic motivation) or more complex processes may account for the effects of perceived discrimination on academic performance. For instance, one response of Mexican American students to discrimination is a strengthening of traditional cultural values which, in turn, has a compensating effect on academic performance (Berkel et al., 2010). More work is needed to understand the mechanisms through which discrimination might influence immigrant students' academic performance.

This study provides some suggestions for interventions that may benefit Mexican American students' academic performance. As an example, providing immigrant students with intensive ELL services from an early age would likely contribute to reducing language hassles and/or increasing their English usage early in their school years and reducing the immigrant-later generation academic performance gap earlier than seventh grade. Further, providing ESL for parents (possibly for the entire family) in the evenings or on weekends could also increase students' English usage particularly in the home. We have observed such programs offered for free by using volunteers and have seen an apparent improvement in parents' interest in and bonding with the school as well as improved language skills for all.

In addition, Mexican American students whose families are experiencing economic hardship generally, indicated by eligibility for free school lunch, could be targets for intervention to improve their academic performance. Given Mexican American parents' strong educational expectations, schools could build on this to attract parents to culturally appropriate and attractive family-based programs that could show them how to encourage and facilitate their children's academic performance. Implementing policies and interventions with the whole student body, teachers, and staff to eliminate discrimination could make schools more welcoming to minorities as well as those transitioning from Spanish to English. Such programs could benefit students whose families suffer from economic hardship broadly not just Mexican immigrant students.

Overall, the results of this study provided additional insights into factors and processes that contributed to the academic performance of Mexican American students who resided in a hostile political and social environment. The diverse sample, the longitudinal design, and the inclusion of mediator variables that reflected cultural experiences of Mexican immigrants were strengths of the study. The prospective analyses increased confidence regarding direction of effects. These results also went beyond the almost exclusive focus on

demographic variables of many prior studies thus providing more options for interventions to improve the academic performance of this population. However, it is not clear how much the results were influenced by the relatively unique social and political contexts that characterized the era during which these students were in school. Thus, the results do need to be replicated with other samples and in other political climates. It also is important to note that the model accounted for only 22% of the variance in 10th grade academic performance. There likely are numerous other variables that are important to understanding academic performance in this population that were not available to this study. For instance, this study did not include important school and peer group factors that likely influenced students' school success; Han (2012) reported that school factors alone accounted for 22% of the variance in school performance between generations. Unfortunately, the study was not able to shed light on why all generations showed a decline in academic performance from seventh to 10th grade; the answer to that question would require comparative research across ethnic groups in the same schools. However, the results do suggest that future research on generation effects on Mexican American students' academic performance would benefit from examining a wider array of variables than the demographic variables that have dominated this research. Further, researchers should test models that provide insight to the *processes* that may contribute to academic performance at different ages/grades rather than just identifying variables correlated with academic performance at one age/grade.

Acknowledgments

Work on this paper was supported, in part, by grant MH 68920 (Culture, context, and Mexican American mental health) and the Cowden Fellowship program of the T. Denny Sanford School of Social and Family Dynamics at Arizona State University. The National Institute of Health is not responsible for the content of this paper. The authors are thankful for the support of Nancy Gonzales, Jenn-Yun Tein, Marisela Torres, Jaimee Virgo, Kelly Proulx, the Community Advisory Board, interviewers, and families who participated in the study.

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Highlights

1. Immigrant students did less well in school at 5th grade but caught up by 7th grade
2. Language hassles, English usage, and discrimination explained the early deficit
3. Economic hardship mediated longer term academic performance
4. Maternal educational expectations contributed to better immigrant achievement

Figure 1.

Theoretical model. Family and student mediators are economic hardship, maternal depression and educational expectations, student language hassles, English usage, perceived discrimination, and mainstream values. T1 = fifth grade; T2 = seventh grade; T3 = 10th grade.

Figure 2.
Academic performance by Generation at fifth (T1), seventh (T2), and 10th (T3) Grades.

Figure 3.

Theoretical longitudinal mediational model of generation predicting student grades. First generation is the reference group for all dummy variables; 2^a dummy variable for second generation; 3^b dummy variable for third generation; and 4^c dummy variable for fourth generation. T1 = fifth grade; T2 = seventh grade; T3 = 10th grade; unstandardized coefficients are shown for dummy variables; standardized path coefficients are shown for other variables. Correlated mediator residual variances are not shown due to space limitations. Only significant paths are shown. $\chi^2(7) = 9.97, p = .19$; CFI = 1.0; RMSEA = .02; SRMR = .02; *** $p < .001$, ** $p < .01$, * $p < .05$.

Table 1
Variables Considered for Inclusion in Theoretical Model and Those Chosen

Category	Variables Considered	Differentiated Generations	Included in Model
Family Variables	Family cohesion		
	Economic hardship	✓	✓
	Parental depression *	✓	✓
	Parental substance abuse	✓	
	Parental deviance		
	Exposure to Mexico *	✓	
	Parent educational aspirations	✓	
	Parent educational expectations	✓	✓
	Parental educational values	✓	
	Parental employment *	✓	
Student Variables	English usage *	✓	✓
	Relational aggression		
	Conduct disorder *		
	Association with deviant peers		
	School aspirations and expectations *		
	Language hassles	✓	✓
	Perceived discrimination	✓	✓
	Gang involvement		
	School attachment *		
	Academic self-efficacy *		
Teacher Variables	Child on-task behavior		
	Child learning behavior		
Cultural Variables	Parent mainstream values	✓	
	Parent familism values	✓	
	Child mainstream values	✓	✓
	Child familism values	✓	
Community Variables (% of tract)	Foreign born	✓	
	Latinos	✓	
	Families in poverty	✓	
	Latino families in poverty	✓	
	Latinos graduated from high school		
School Variables (% of students)	Eligible for free lunch *	✓	
	Latinos	✓	

* Variables known to have been included in prior studies of generation differences

Table 2
Correlations, Means, and Standard Deviations of all Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Student generation	-										
2. T1 Economic hardship	-.25**	-									
3. T1 Mom depression	-.13**	.48**	-								
4. T1 Mom ed. expectations	-.10**	-.09*	-.14**	-							
5. T1 Student language hassles	-.12**	.07	.09*	-.06	-						
6. T1 Student English usage	.37**	-.20**	-.10**	-.02	-.10**	-					
7. T1 Discrimination	-.22**	.17**	.14**	-.10**	.35**	-.14**	-				
8. T1 Mainstream values	-.20**	.20**	.15**	-.04	.11**	-.14**	.33**	-			
9. T1 Classroom ranks	.12**	-.19**	-.16**	.24**	-.17**	.17**	-.24**	-.26**	-		
10. T2 Grades	.01	-.11**	-.10*	.18**	-.13**	.07	-.19**	-.17**	.50**	-	
11. T3 Grades	.01	-.16**	-.09*	.14**	-.10*	.04	-.08	-.02	.32**	.43**	-
Sample means	2.16	0.00	1.78	14.16	.56	4.33	1.80	5.28	3.21	3.44	3.13
Standard deviations	1.04	3.24	.53	1.09	.90	.66	.62	1.77	1.31	1.15	1.22

Note: ed = educational; T1 = fifth grade; T2 = seventh grade; T3 = 10th grade.

**
 $p < .01$;

*
 $p < .05$

Table 3
Specific Indirect Effects And Percentile Bootstrapping Confidence Limits For The Model

Effect	Estimate	Standard Error	Z	95% CL	
				Upper	Lower
Gen ₂ ^a → T1 Economic Hardship → T3 Grades	.06	.03	1.93	.005	.123
Gen ₂ ^a → T1 English Usage → T1 Ranks → T2 Grades → T3 Grades	.01	.00	2.12*	.003	.024
Gen ₂ ^a → T1 Discrimination → T1 Ranks → T2 Grades → T3 Grades	.01	.00	1.96	.002	.019
Gen ₂ ^a → T1 Mainstream Values → T1 Ranks → T2 Grades → T3 Grades	.01	.00	1.94	.001	.016
Gen ₃ ^b → T1 Economic Hardship → T3 Grades	.09	.05	1.93	.008	.180
Gen ₃ ^b → T1 English Usage → T1 Ranks → T2 Grades → T3 Grades	.02	.01	2.16*	.005	.034
Gen ₃ ^b → T1 Discrimination → T1 Ranks → T2 Grades → T3 Grades	.01	.01	1.97*	.003	.027
Gen ₃ ^b → T1 Mainstream Values → T1 Ranks → T2 Grades → T3 Grades	.01	.01	2.49*	.004	.026
Gen ₄ ^c → T1 Economic Hardship → T3 Grades	.08	.04	1.94	.007	.174
Gen ₄ ^c → T1 Ranks → T3 Grades	-.11	.05	-2.01*	-.211	-.001
Gen ₄ ^c → T1 Mainstream Values → T1 Ranks → T3 Grades	.01	.01	1.82	.001	.029
Gen ₄ ^c → T1 Ed. Expectations → T1 Ranks → T2 Grades → T3 Grades	-.02	.01	-2.41*	-.028	-.005
Gen ₄ ^c → T1 Language Hassles → T1 Ranks → T2 Grades → T3 Grades	.01	.00	1.75	.001	.014
Gen ₄ ^c → T1 English Usage → T1 Ranks → T2 Grades → T3 Grades	.02	.01	2.33*	.006	.046
Gen ₄ ^c → T1 Discrimination → T1 Ranks → T2 Grades → T3 Grades	.02	.01	2.17*	.004	.031
Gen ₄ ^c → T1 Mainstream Values → T1 Ranks → T2 Grades → T3 Grades	.02	.01	3.15**	.009	.035

Note:

^a Dummy variable for second generation;

^b Dummy variable for third generation;

^c Dummy variable for fourth generation; First generation is the reference group for all dummy variables; Ed. = Educational; CL = Confidence Limits;
**
p < .01,

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