Neighborhood Contexts and Dietary Acculturation Among Mexican-origin Children

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Paper to be presented at the Health Across Borders Conference at the University of Maryland, September 18-19, 2014

This research was supported by grants from the National Institutes of Health (R24 HD041025 and P01 HD062498).

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Abstract

Health and immigration researchers often focus on dietary acculturation to help explain why Mexican children of immigrants tend to gain weight after moving to the United States, but rarely explore how this process varies geographically within the U.S. We use data from the National Health and Nutrition Examination Survey to explore how Mexican-origin children's spatial assimilation shapes the process of dietary acculturation. We used a new measure of dietary acculturation that measures how similar Mexican-origin children's diets are compared with the foods most commonly consumed by same-aged 3rd generation children of all race/ethnic groups. Our preliminary results indicated that generational status is strongly associated with Mexican children's dietary acculturation independent of neighborhood composition, householder's educational attainment, language of interview and the other controls. Second, neighborhood context was associated with dietary acculturation. Mexican-origin children who live in neighborhoods with higher concentrations of foreign-born Mexicans had lower levels of dietary acculturation, but dietary acculturation was higher among children living in neighborhoods with higher percentages of non-Hispanic whites and persons with low educational attainment. Third, our decomposition analysis suggested that dietary acculturation among Mexican-origin children is probably not caused by spatial assimilation. The dispersion of Mexicans to more ethnically diverse neighborhoods was associated with increased dietary assimilation, but this was offset by a concurrent shift to more affluent neighborhoods (with more educational attainment). Overall the results suggest that the process of adapting to life in the United States likely involves a mixture of costs and benefits: increases in material well-being but also the loss of cultural traditions and practices in every-day life.

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INTRODUCTION

Among children, Mexican-Americans are among the heaviest race/ethnic groups in the United States (Ogden et al. 2012). Although obesity is also high and increasing in Mexico (Rivera, Irizarry and González-de Cossío 2009), obesity among Mexican-American children does not appear to be imported from Mexico. In fact, Mexican children whose parents are the most likely to migrate to the U.S. are among the leanest children in Mexico. They appear to gain weight rapidly after arriving in the United States (Van Hook et al. 2012).

Health and immigration researchers often attribute patterns such as these to dietary acculturation and other weight-related lifestyle changes (Akresh 2007; Antecol and Bedard 2006; Gordon-Larsen et al. 2003). Indeed, the U.S. environment is often characterized as unhealthy for all residents and not just immigrants. This idea is reflected, for example, in Mirosky and Ross's conceptualization of the "default American lifestyle." They portray the U.S. economy and society as a place where the easiest behavioral pathways lead to unhealthy diet and sedentary activities; deliberate efforts and self-direction are required to deviate from this default lifestyle (Mirowsky and Ross 2010). To underscore this point, few U.S. children have diets that conform to USDA recommendations (Guenther et al. 2013; Hiza et al. 2013). The item most frequently named in children's dietary recalls is soda, such that 47% of 5 to 9 year olds and 67% of 15 to 19 year olds drank soda at least once the previous day (authors' calculations). Thus it makes sense that Mexican immigrants' acculturation would involve the eventual adoption of default American lifestyle.

With a few exceptions, the health acculturation process is often implicitly portrayed as occurring more-or-less uniformly and irreversibly across all groups in the United States. Yet as Mexican immigrants acculturate U.S. norms and behaviors, they also tend to move out of the working class and into the middle class (Brown 2007; Iceland and Scopilliti 2008; Myers 2007; Vallejo 2012), which may place them in environments that makes it easier to resist the default lifestyle. We therefore argue that it is important to consider how spatial assimilation processes, which often involve simultaneous shifts from coethnic to non-coethnic neighborhoods and from poor to non-poor neighborhoods, could drive or, alternatively, slow down health acculturation.

In this paper we use data from the National Health and Nutrition Examination Survey to explore how Mexican-origin children's spatial assimilation shapes the process of dietary acculturation. We focus on dietary acculturation rather than other weight-related behaviors, such as physical activity, because dietary change is more likely to be responsible for immigrants' weight gain following migration (physical activity actually increases with duration of U.S. residence (Singh et al. 2008)). We employ a new measure of dietary acculturation that indicates the degree to which children's diets resemble those of their U.S.-born peers (Van Hook, Quiros and Frisco Under Review) to address three research questions:

1. How much does the level of dietary acculturation change across generations (i.e., how does it vary across 1^{st}, 2^{nd}, and 3^{rd} generation children)?
2. What is the association of dietary acculturation with ethnic composition and socioeconomic disadvantage of children's neighborhoods?
3. To what degree are generational differences in dietary acculturation associated with changes in children's neighborhood contexts?

BACKGROUND

Dietary acculturation refers to the shift from a diet consisting primarily of foods of immigrants' country of origin to American foods (Satia-Abouta et al. 2002). Diet is an important marker of ethnicity and is therefore of sociological significance in and of itself. Ethnic food at mealtimes and holidays provides immigrants important opportunities to remember and sustain cultural traditions. Dietary acculturation is also important because it is related to health. Although the relationship between acculturation and healthy diet is sometimes mixed (Carrera, Gao and Tucker 2007; Edmonds 2005; Liu, Berhane and Tseng 2010), the preponderance of evidence suggests that migration to the United States and duration of U.S. residence are associated with a shift in diet, often involving less vegetable and fiber and more meat, fat, and sugar consumption (Akresh 2007; Ayala, Baquero and Klinger 2008; Batis et al. 2011; Brown 2005; Dixon, Sundquist and Winkleby 2000; Duffey et al. 2008; Guendelman and Abrams 1995) and an overall less healthy diet (Batis et al. 2011; Van Hook, Quiros and Frisco Under Review). Dietary acculturation is also associated with a wide range of health problems such as obesity (Lin, Bermudez and Tucker 2003), diabetes (Oster and Yung 2010), and cardiovascular disease (Wong et al. 2013).

It is well known that children's diets are heavily influenced by their developmental age and parental eating behaviors and resources (Birch 1999; Birch and Fischer 1998). Country and neighborhood contexts further influence children's diets. For example, simply moving from one country to another (e.g., from Mexico to the U.S.) has been shown to change diet (Akresh 2007). Although the precise reasons for dietary change remain unclear, one idea is related to food availability and advertising. When immigrants come to the U.S., they enter an environment in which they and their children are inundated with advertisements and opportunities to purchase food that is of low nutritional quality. Another potential mechanism is the desire to conform. Children, particularly adolescents, often desperately want to fit in with their peers, wearing the same clothing, speaking the same language, and even eating the same food (Nguyen 2007; Salvy et al. 2012). Stereotypically American foods like burgers, fries, soda, and pizza may be particularly appealing to children of immigrants who want to fit in with their American peers.

Within the United States, children's neighborhood contexts could accelerate or mitigate this process. We focus here on two key aspects of children's neighborhood contexts: the level of economic disadvantage and the degree to which these contexts expose children to the wider American society beyond the Mexican community. Poor neighborhoods may feature more fast food restaurants and snack-food stores, and fewer full-service grocery stores and family restaurants, which in turn may constrain food choices (Drewnowski 2012). Additionally, the food norms in disadvantaged neighborhoods are probably different than in other places. The people living in neighborhoods with low average educational attainment are likely to have less healthy diets than those living in more affluent neighborhoods (Mirowsky and Ross 2010). Immigrants who acculturate in these contexts may more quickly shift toward this default American diet.

However, ethnic social capital in some immigrant communities may protect immigrant children and adolescents from hazards in disadvantaged neighborhoods (Portes and Sensenbrenner 1993). Co-ethnic networks may create markets for ethnic foods, reduce the reach and influence of advertising for fast food and soft drinks, and reduce children's desire to fit in by seeking American foods. This form of protection may be stronger when ethnic groups are able to create closure within their social networks, such that everyone has some kind of social tie with everyone else in the community (Coleman 1988). In such communities, not only are parents better able to keep tabs on their children, the protective cultural influences of immigrant parents are likely to be reinforced by others in the community.

To gauge the importance of neighborhood context, it is important to consider the degree to which Mexican-American children are actually exposed to disadvantaged and coethnic neighborhoods, which is likely to vary considerably by generational status. As early as the 1920s, Burgess (1925) noted how immigrant ethnic groups tend to be spatial concentrated in central cities, but disperse over time (or assimilate spatially). Spatial assimilation was later documented more systematically for contemporary immigrants (Logan and Alba 1993), including Hispanics (Brown 2007; Iceland and Scopilliti 2008). This work suggests that when Mexican immigrants first arrive in the United States, they tend to settle in neighborhoods and communities that are both ethnically segregated and poor. However, later generation Mexican families, particularly those in the 3rd or higher generation, are more likely to live in middle-class neighborhoods with fewer foreign-born Hispanics and more non-Hispanic whites.

These ideas lead to three major expectations. First, given the uniformity and ubiquity of advertising and food markets in the U.S., we expect large generational differences in dietary acculturation independent of neighborhood context or other factors. In comparison with U.S.-born children as a whole (of all race/ethnic groups), 1st generation Mexican children will have the most distinctive diets, 2nd generation Mexican children will have more similar diets, and 3rd generation Mexican children will have the most similar diets.

Second, given the importance of local communities for health and health behaviors, we expect dietary acculturation to be associated with neighborhood SES and coethnic composition. On the one hand, we expect that Mexican-origin children who live in lower-SES neighborhoods will have more acculturated diets than children in higher-SES neighborhoods. On the other hand, we expect that Mexican-origin children will have less acculturated diets if they live in communities with relatively more coethnics (particularly foreign-born coethnics) and fewer non-Hispanic whites and blacks.

Third, because of the opposing effects of neighborhood SES and ethnic composition, the spatial assimilation of Mexican-origin children may *not* be associated with increases in dietary acculturation. As Mexican-origin families disperse beyond coethnic neighborhoods, dietary acculturation is likely to increase. However, this may be offset partially or entirely if these changes are accompanied by shifts to more affluent neighborhoods, which may lower dietary acculturation.

METHODS

Data

Data for the study were derived from the 1999/00-2009/10 continuous National Health and Nutrition Examination Survey (NHANES). NHANES is a nationally representative, cross-sectional study conducted by the Centers for Disease Control and Prevention (CDC). We used the restrict-use version of the NHANES, which contains census tract identifiers and was linked to information about the population composition of children's census tracts. Tract-level data were obtained from the 2000 Census Summary Files (for the 1999/00-2003/04 NHANES) and the 2005-2009 American Community Survey Summary Files (for the 2005/06-2009/10 NHANES). Our sample was restricted to the 4,720 Mexican origin children age 5-17 in the 1999-2009 NHANES who participated in the day 1 dietary recall, did not report extreme total kilocalorie values on the dietary recall (Kcal <500 or >8000), and who had valid responses to all analytic variables.

Measures

Dietary Acculturation. We employed a new measure of dietary acculturation, the Food Similarity Index (FSI). Introduced in a previous paper (Van Hook, Quiros and Frisco Under Review), the FSI indicates the similarity of the foods consumed by individuals to the foods most commonly consumed by same-aged U.S-born persons of all racial/ethnic groups.

FSI was constructed using NHANES dietary recall data collected by trained interviewers using the United States Department of Agriculture (USDA) Automated Multiple-pass Method. Day 1 recalls were conducted in person. Day 2 recalls were conducted by telephone 3-10 days afterwards. We only used Day 1 data due to high levels of missing data on Day 2. An adult familiar with the child's intake assisted in interviews with children ages 5-11. All recalled foods were coded by NHANES staff using the USDA Food and Nutrient Database for Dietary Studies (Blanton et al. 2006; Conway et al. 2003; Moshfegh et al. 2008).

Calculating the FSI required three steps. First, we used dietary recall data from 3rd generation children (defined here as U.S.-born children with U.S.-born householders) of any racial or ethnic group to assign each USDA 3-digit food category a frequency score, $r_{j,a}$. This score indicates the proportion of 3rd generation children that consumed the food. To account for age variations in food preferences (Birch 1999) we made these calculations among three age groups (a_1=5-9, a_2=10-14, a_3=15-19). In step 2 we assigned *all* children the mean score averaged across all foods they consumed that day (S_{ia}). Thus children of all generations received scores, as children in all groups may eat uncommon foods. In calculating these averages, we weighted the scores by the proportion of food eaten (in grams):

$$S_{ia} = \frac{\sum r_{ja} g_{i,j,a}}{\sum g_{i,j,a}}$$

where $g_{i,j,a}$ equals the grams consumed of food category j by child i of age group a. We used grams rather than calories to account for low calorie foods and zero-calorie drinks. The final step in creating FSI was transforming S_{ia}. It was reverse-scored so that higher values indicating greater food similarity and then converted to a percentile normed against 3rd generation children in the appropriate age group. Thus, an FSI value of 50 indicates that a child's diet was as American as the median 3rd generation child in his/her age group.

Community Disadvantage. We measured neighborhood disadvantage using two indicators: the percentage of households in the child's census tract in poverty, and the percentage of adults age 25+ with less than a high school diploma.

Ethnic and Immigrant Composition. We measured coethnic concentration with the percentage of U.S.-born Mexicans and foreign-born Mexicans in the census tract. We measured exposure to American society with the percentage of non-Hispanic whites and non-Hispanic blacks in the census tract.

Family Context. Our statistical models controlled for children's family context. We used the householder's educational attainment as an indicator of the resources available to child's family (less than high school, high school, some college, and college+). We used the language of the family interview (English=1) and generational status to indicate the level of acculturation of the child and his/her parents. To measure generational status, we categorized the Mexican-origin children their place of birth and the place of birth of the householder. First generation children were born outside of the United States. Second generation children were born in the United States but had a foreign-born householder. All remaining children were classified as third generation (technically, they are third-or-higher generation, but we use the simplified label, "third generation").

Controls. Our statistical models included several control variables, including the child's age (5-11, 12-15, 16-17), gender (boy=1), day of week of the day 1 dietary recall (weekend=1), whether the dietary recall occurred in the summer (June, July, or August), and whether the child ate lunch on the day of the dietary recall.

Data Analysis

All analyses were conducted in Stata 12.0. Because of the low percentage of missing values on the analytic variables (less than 5%), we used listwise deletion rather than multiple imputation to handle missing values. All estimates were adjusted to account for the clustered and stratified NHANES sample design.

To assess our first research expectation, we estimated the average level of dietary acculturation, neighborhood ethnic composition, and neighborhood disadvantage by generational status (Table 1).

To evaluate our second research expectation, we estimated the relationship of neighborhood ethnic composition and neighborhood disadvantage with children's dietary acculturation. Table 2 first assesses the degree of colinearity among the neighborhood indicators with a series of OLS regression models that predict FSI. After establishing that neighborhood ethnic composition and SES operate independently but that coethnic concentration and exposure to U.S. groups are highly correlated, Table 3 displays the full models, first of the relationship between co-ethnic concentration and FSI (Model 1) and, second, between exposure to U.S. groups and FSI (Model 2).

Finally, to assess our third research expectation, we employed regression decomposition techniques (Jann 2008) to estimate the degree to which generational differences in dietary acculturation can be explained by differences in neighborhood contexts versus other factors. We decompose 2^{nd} – 1^{st} and 3^{rd} – 2^{nd} generational differences in mean FSI. For example, the 2^{nd} – 1^{st} difference can be expressed as a function of differences in neighborhood composition as follows:

$$\bar{F}^{2} - \bar{F}^{1} = \sum_{j=1}^{J} b_{j}^{N}\left(\bar{X}_{j}^{2} - \bar{X}_{j}^{1}\right) + \sum_{k=1}^{K} b_{k}^{F}\left(\bar{X}_{k}^{2} - \bar{X}_{k}^{1}\right) + \sum_{l=1}^{L} b_{l}^{C}\left(\bar{X}_{l}^{2} - \bar{X}_{l}^{1}\right).$$

where the superscripts 1 and 2 indicate generation, b_{k}^{N} are the coefficients related to neighborhood context, b_{k}^{F} are the coefficients related to family context, b_{k}^{C} are all other coefficients, and the X-bars are the mean values for each variable by generation. The first component on the right-hand side of the equation is the difference due to differences in neighborhood composition, the second is the difference due to differences in family context, and the third is the remaining difference.

RESULTS

As shown in Table 1, Mexican-origin children's dietary acculturation increased across generations. The average FSI was 42.0 in the 1^{st} generation to 46.3 in the 2^{nd}, to 48.6 in the 3^{rd}. Consistent with prior research on the spatial assimilation, children's neighborhood contexts also differed dramatically across generations. The share of U.S. and foreign-born Mexicans living in children's census tracts actually increased between the 1^{st} and 2^{nd} generations but declined between the 2^{nd} and 3^{rd} generations. Conversely, the share of non-Hispanic whites living in children's census tracts increased dramatically between the 2^{nd} and 3^{rd} generations (from 27.0 to 42.0 percent), and the share of non-Hispanic blacks declined from 7.3 percent among the 1^{st} generation to 4.5 and 3.4 percent among the 2^{nd} and 3^{rd} generations, respectively. Finally, the SES of children's neighborhoods increased. Between the 2^{nd} and 3^{rd} generations, the share of residents with less than a high school education declined from 35.7 to 25.8 percent, and the share of households in poverty declined from 20.4 to 16.8 percent.

Table 1 further shows large differences between the 2^{nd} and 3^{rd} generation in children's family contexts, but much smaller differences between the 1^{st} and 2^{nd} generation. Third generation children had householders with much higher levels of education (e.g., 45.3 percent had a college degree or more compared with 13.7 percent in both the 1^{st} and 2^{nd} generations). Additionally, nearly all of the family interviews for 3^{rd} generation children were conducted in

English (96.6 percent) compared with roughly half or less among 1st and 2nd generation children.

We next explored the relationship between children's neighborhood contexts and dietary acculturation. Neighborhood characteristics are often highly collinear so their estimated effects could depend heavily on which of the other neighborhood measures are included in the model. To assess robustness of the estimated coefficients, Table 2 estimates a series of models. All models in Table 2 include family contextual and control variables but their coefficients are not shown. The first column of Table 2 (labeled bivariate relationships) shows the coefficients for each neighborhood indicator when entered separately in the model. Model 1 includes the indicators of coethnic concentration (percentage Mexican U.S. and foreign-born), and Model 2 adds neighborhood SES. Model 3 includes the indicators of exposure to U.S. (percentage non-Hispanic white and black), and Model 4 adds neighborhood SES. The results indicate generally consistent estimates with respect to direction and significance across the model specifications, suggesting that the neighborhood SES indicators operate relatively independently of neighborhood ethnic composition. However, our preliminary analyses showed volatility in the ethnic composition coefficients when all four are included together in the same model (models not shown). We therefore opted to estimate the effects of coethnic composition (% Mexican U.S.-born, % Mexican foreign-born) and exposure to American groups (% NH-white, % NH-black) in separate models.

Table 3 displays the full models predicting FSI. Consistent with our first expectation, we found that generational status and English language of interview were both positively associated with dietary acculturation, net of neighborhood context and controls. Also consistent with our expectations, dietary acculturation was generally lower in neighborhoods with more immigrants and higher in neighborhoods with more non-Hispanic whites. FSI was negatively associated with the percentage of Mexican foreign-born persons in the child's neighborhood (Model 1), but unrelated to the percentage of U.S.-born Mexicans in the neighborhood. This suggests that the share of immigrants, not just coethnics, is relevant for dietary acculturation. Also, FSI was positively associated with the share of non-Hispanic whites (Model 2). Somewhat unexpectedly, dietary acculturation was unrelated to the share of non-Hispanic blacks in the neighborhood.

The relationship between neighborhood disadvantage and dietary acculturation was less clear. Dietary acculturation was positively related to the share in the neighborhood with less than a high school education, as expected, but negatively related to the share in poverty.

To what degree do generational differences in neighborhood context explain generational differences in dietary acculturation? Table 4 displays the results of the decomposition analyses. They confirm our expectation that shifts in neighborhood context explain little of the generational differences in dietary acculturation. To walk readers through an example, we focus on the last column, which displays the results for 3rd-1st generation differences based on Model 2. The overall generational difference in FSI is 6.57 points. Generational differences in neighborhood context explain none of this difference. In fact, dietary acculturation among the 3rd generation would be nearly 1 point *lower* (-.87 points) than the 1st if the only difference between the generations were neighborhood context. How can this be? The 3rd generation lives in neighborhoods with more non-Hispanic whites, and this difference is in fact associated with more dietary acculturation (1.60 points). However, the 3rd generation also lives in neighborhoods with higher levels of education, and this difference is associated with *lower* dietary acculturation (2.58 points), which more than offsets the ethnic composition effects. In general, these offsetting effects are more prominent for the 3rd-2nd generational comparison than the 2nd-1st comparison because neighborhood contexts change more between the 2nd and 3rd generations than between the 1st and 2nd generations.

DISCUSSION

Immigrants want better lives for themselves and their children. Yet adapting to life in the United States likely involves a mixture of costs and benefits: increases in material well-being but also the loss of cultural traditions and practices in every-day life. In this paper, we explore how one dimension of acculturation, spatial assimilation, is associated with changes in diet among Mexican-origin children. We used a new measure of dietary acculturation that measures how similar Mexican-origin children's diets are compared with the foods most commonly consumed by same-aged 3rd generation children of all race/ethnic groups.

Our preliminary analyses generally supported our research expectations. First, generational status was strongly associated with children's dietary acculturation independent of neighborhood composition, householder's educational attainment, language of interview and the other controls. Although our data are cross sectional and do not track real generational change, the results suggest that dietary acculturation proceeds with exposure to the United States.

Second, neighborhood context was associated with dietary acculturation. Mexican-origin children who live in neighborhoods with higher concentrations of foreign-born Mexicans had lower levels of dietary acculturation. Conversely, dietary acculturation was higher among children living in neighborhoods with higher percentages of non-Hispanic whites and persons with low educational attainment. Although the mechanisms linking neighborhood ethnic composition to diet remains unclear, we speculate that ethnic social capital or markets in immigrant communities may slow down dietary acculturation. Unexpectedly, the percentage of non-Hispanic blacks was unrelated to dietary acculturation. One possible explanation is that Mexican immigrant families and children do not interact very much with the African Americans living in their communities. Another unexpected finding was that neighborhood poverty was negatively associated with dietary acculturation. One possibility is that impoverished neighborhoods trigger a sense of threat, leading Mexican immigrant parents to shelter their children from outside influences.

Third, our decomposition analysis suggested that dietary acculturation among Mexican-origin children is probably not caused by spatial assimilation. The dispersion of Mexicans to more ethnically diverse neighborhoods was associated with increased dietary assimilation, but this was offset by a concurrent shift to more affluent neighborhoods (with more educational attainment). Thus while neighborhood contexts probably shape children's diets, the actual process of spatial assimilation brings about a package of changes in children's neighborhood environment that, when combined, neutralize one another. Offsetting processes like this may help explain the puzzling finding that obesity among Mexican-origin children does not increase across generations (Hamilton, Hummer and Padilla 2011; Van Hook and Baker 2010; Van Hook, Baker and Altman 2009; Van Hook et al. 2012).

We conclude with the caveat that the results are highly preliminary. We plan to explore additional neighborhood measures related to the food environment (e.g., fast food restaurants). Additionally, our analyses assumed linear relationships between neighborhood contexts and dietary acculturation; we still need to test this assumption. Finally, we plan to assess whether the neighborhood effects vary by generational status. Nevertheless, the results point to a complex and highly contextualized process through which children of Mexican immigrants acquire American eating behaviors.

Table 1. Means for all Analytic Variables, Mexican-origin children ages 5-17, NHANES 1999/00 - 2009/10

	All Generations	1st Generation	2nd Generation	3rd+ Generation
Dietary Acculturation	46.5	42.0	46.3	48.6
Neighborhood Context				
% Mexican Foreign born	20.0	20.0	23.8	15.7
% Mexican US born	24.2	23.4	27.0	21.5
% NH-White	33.6	31.4	27.0	42.0
% NH-black	4.5	7.3	4.5	3.4
% Less Than High School	31.6	34.3	35.7	25.8
% Poverty	19.1	21.2	20.4	16.8
Family Context				
Generational Status (percent)				
1st Generation	16.3			
2nd Generation	44.7			
3rd+ Generation	39.0			
English interview (percent)	68.0	42.4	52.3	96.6
Householder's education (percent)				
Less than High School	29.6	48.1	44.3	5.1
High School	23.8	22.9	25.8	21.9
Some College	20.5	15.3	16.1	27.7
College+	26.1	13.7	13.7	45.3
Control Variables				
Child's Age (percent)				
Age 5-11	57.3	43.1	62.9	56.7
Age 12-15	29.7	35.1	27.1	30.4
Age 16-17	13.0	21.8	9.9	12.9
Boy (percent)	50.9	55.1	51.3	48.5
Dietary recall on weekend	29.5	36.3	30.2	25.9
Dietary recall in summer (June, July, Aug)	12.6	13.3	10.5	14.8
Ate lunch on dietary recall day	83.6	83.2	84.3	82.9
N	4720	912	2144	1664

Table 2. OLS Regression Models of Neighborhood Context and Dietary Acculturation among Mexican-origin children ages 5-17, NHANES 99/00-09/10 (selected coefficients)

	Bivariate Relationship		Model 1		Model 2		Model 3		Model 4	
DV = Dietary Acculturation										
% Mexican Foreign born	-0.144	*	-0.125	*	-0.153	**				
% Mexican US born	0.108	+	0.051	+	0.000					
% NH-White	0.062	**					0.065	**	0.151	**
% NH-black	0.069						0.089		0.143	
% Less Than High School	0.069	**			0.193	*			0.307	*
% Poverty	-0.043				-0.180	**			-0.154	*

All models control for family context and other control variables

Table 3. OLS Models of Dietary Assimilation among Mexican-origin children ages 5-17, NHANES 99/00-09/10

	Model 1		Model 2	
Neighborhood Context				
% Mexican Foreign born	-0.153	**	----	
% Mexican US born	0.000		----	
% NH-White	----		0.151	**
% NH-black	----		0.143	
% Less Than High School	0.193	*	0.307	*
% Poverty	-0.180	**	-0.154	*
Family Context				
Generational Status (Ref=1st)				
2nd Generation	4.047	*	4.211	*
3rd+ Generation	4.875	+	4.575	+
English interview	4.512	**	6.087	*
Householder's Education (Ref=>HS)				
HS	3.628	*	3.420	*
Some College	0.642		0.754	
College+	-0.649		-0.238	
Control Variables				
Child's Age (Ref=5-11)				
Age 12-15	-0.024		-0.263	
Age 16-17	-0.195		-0.325	
Boy	3.825	**	3.634	**
Dietary recall on weekend	1.750		1.941	
Dietary recall in summer (June, July, Aug)	0.469		-0.296	
Ate lunch on dietary recall day	5.225	*	5.367	+
Intercept	32.459	*	18.572	*
R-square	0.058		0.038	
N	4720		4720	

Table 4. Contributions of Differences in Neighborhood and Family Contexts to Generational Differences in Dietary Acculturation

	Generational Differences, based on Model 1			Generational Differences, based on Model 2		
	2nd - 1st	3rd - 2nd	3rd - 1st	2nd - 1st	3rd - 2nd	3rd - 1st
Generational Difference in Dietary Acculturation (broad food categories)	**4.28**	**2.30**	**6.57**	**4.28**	**2.30**	**6.57**
Due to Differences in:						
Neighborhood Context	**-0.15**	**-0.02**	**-0.16**	**-0.51**	**-0.35**	**-0.87**
% Mex. Foreign born	-0.57	1.23	0.66	---	---	---
% Mexican US born	0.00	0.00	0.00	---	---	---
% NH-White	---	---	---	-0.67	2.27	1.60
% NH-black	---	---	---	-0.41	-0.16	-0.57
% Less Than High School	0.27	-1.90	-1.62	0.44	-3.02	-2.58
% Poverty	0.15	0.65	0.80	0.13	0.55	0.68
Family Context	**0.56**	**1.73**	**2.28**	**0.71**	**2.58**	**3.28**
English	0.44	2.00	2.45	0.60	2.70	3.30
Parental Education	0.11	-0.27	-0.16	0.11	-0.12	-0.02
Other Factors	**3.87**	**0.59**	**4.45**	**4.08**	**0.07**	**4.16**

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