Article

The Hispanic health paradox: New evidence from longitudinal data on second and third-generation birth outcomes

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ABSTRACT

This study examines the birth weight of second and third-generation Hispanics born in California and Florida, two of the major immigrant destination states in the US. I exploit a unique dataset of linked birth records for two generations of children born in California and Florida (1970–2009) and linear probability models to investigate the generational decline in the birth outcomes of Hispanics in the US. The data allow using an extensive set of socio-demographic controls and breaking down the results by country of origin. Second-generation children of Mexican and Cuban origin have better birth outcomes than children of US-born white women. Children of Puerto Rican origin have instead worse birth outcomes. The advantage observed among second-generation Hispanics erodes substantially in the third generation but third-generation Mexicans retain some of it.

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1. Introduction

Despite a lower socio-economic status, children of first-generation immigrants of Hispanic origin have better birth outcomes than children of US born white women (Acevedo-Garcia, Soobader, & Berkman, 2007). However, previous studies have shown that birth outcomes deteriorate in later generations (Acevedo-Garcia, Soobader, & Berkman, 2005), despite socio-economic assimilation (Duncan & Trejo, 2015; Teitler, Martinson, & Reichman, 2015). These facts are commonly referred to as the Hispanic Health Paradox which has been observed with respect to several health outcomes (Black, Devereux, & Salvanes, 2007; Markides & Coreil, 1986).

Poor health at birth has long-term consequences on adult health, socio-economic outcomes and it is associated with increased health care costs (Lewit, Baker, Corman, & Shiono, 1995). Second generation births have surpassed immigration as the main driver of the dynamic growth of the American population. Hispanics are by far the largest ethnic group in the US and children of Hispanic origin are a majority of newborns in many US counties (Passel, Cohn, & Lopez, 2011). Thus, understanding the health trajectories of Hispanics in the US is paramount to understand the health of next generation Americans and to address health disparities in the population (People, 2013).

Most of the extant evidence on the Hispanic Paradox is based on cross-sectional data using synthetic cohorts or short panel surveys that do not allow a longitudinal analysis across generations (Antecol & Bedard, 2006; Hummer, Powers, Pullum, Gossman, & Frisbie, 2007; Riosmena, Wong, & Palloni, 2013; Shaw & Pickett, 2013). Furthermore, often the data does not allow analyzing the intergenerational health trajectories of immigrant descendants by country of origin. Hispanic ethnicity encompasses individuals coming from different backgrounds and migration histories. While several studies pointed out the need to analyze health trajectories of immigrants across generation (Jasso, Massey, Rosenzweig, & Smith, 2004), to the best of my knowledge there is no paper analyzing the Hispanic Health Paradox using individual linked data on two generation of immigrant descendants.

This study exploits a unique data drawn from administrative records of California and Florida Vital Statistics to fill this gap in the literature. Furthermore, the large sample size of immigrants allows me to conduct country specific analysis and rely on a broad set of control characteristics.

2. Methods

The primary data used in this study are drawn from the Birth Statistical Master File provided by the Office of Vital Records of the California Department of Health and the Birth Master Dataset provided by the Bureau of Vital Statistics of the Florida Department of Health. These data contain information extracted from the

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birth certificates of all children born in the years 1970–1985 (1970–1981 in California and 1971–1985 in Florida) and in the years 1989–2009. For expositional simplicity, I refer to all women giving birth between 1970 and 1985 as the first generation (grandmothers, G1); to all the children born between 1970 and 1985, as the second generation (G2); and to all the children born between 1989 and 2009 as the third generation (G3). I use this definition for both immigrant and natives. The socio-demographic information (e.g., age at delivery, education etc.) on second generation mothers (G2) is drawn from the third generation records (G3), while the socio-demographic information on the first generation grandmothers (G1) is drawn from the second generation (G2) birth records.

Information about the mother country and state of birth, the mother first and maiden name, the child full name, date of birth, gender, parity, race, birth weight, hospital of birth, and county of birth are available in both states for the full period considered. However, not all variables are available in each year and for each of the two states. For instance, the mother age is reported for the entire period in California but only after 1989 in Florida, whereas the mother education is reported for the entire period in Florida but only since 1989 in California. Information on birth weight is available for the entire period in both states, whereas other important measures of health at birth (e.g., Apgar score, gestational length, etc.) are unfortunately only available in more recent years. Though a few studies cast doubt on the notion that birth weight has a causal effect on mortality in particular and infant health more generally (Wilcox, 2001; Almond, Chay, & Lee, 2005), there is a general consensus that low birth weight (conventionally defined as a birth weight lower than 2500 g) is an important marker of health at birth and strongly associated with increased mortality and morbidity risk (Paneth, 1995; Conley & Bennett, 2000; Currie, 2011). Because this study does not analyze the effects of birth weight and birth weight is the only measure of birth outcomes available for the entire period, I will primarily focus on birth weight and the incidence of low birth weight as indicators of health at birth.

As in the previous literature employing administrative birth records (Fryer & Levitt, 2004; Currie & Moretti, 2007; Royer, 2009), I am able to link information available at a woman birth to that of her children, if the woman is born in California (Florida) and also gave birth in California (Florida).

One of the typical drawbacks of administrative vital statistics is the lack of information on individual income and occupation. However, the data contain certain information on parental education, hospital zip code, and the mother residential zip code. Data on zip code socio-demographic and economic characteristics are drawn from the U.S. Census (source: Social Explorer).

To construct the intergenerational sample, I linked the records of children (G2) born to first-generation (G1) mothers between 1970 and 1985 to the records of their own third-generation children (G3) born in California and Florida between 1989 and 2009. The matching is performed using the second-generation mother first and maiden names, date of birth, and state of birth.

I restrict the empirical analysis to children born between 1970 and 1985 to white mothers and Hispanic first-generation immigrant mothers coming from Cuba, Puerto Rico, and Mexico. I exclude children of Hispanic first-generation women born in countries besides Cuba, Puerto Rico, and Mexico as these are the only countries for which information on mother's country of birth is explicitly reported.

To verify the paradox within the longitudinal data, I estimate a linear probability model that relies on a comprehensive set of individual and contextual controls to study the conditional differences in birth outcomes between immigrants and natives. Formally, I consider the following model:

$$H_{izt,2} = \alpha + \beta Hisp_{izt,G_1,} + \gamma X_{izt,G_1} + \tau_{t,G_2} + \zeta_{z,G_2} + \varepsilon_{izt,G_2}$$

where the subscripts G1 and G2 represent the first and second generations, respectively.

The parameter $H_{izt,2}$ is the birth outcome (such as birth weight, incidence of low birth weight, etc.) of the second-generation child i (for both females and males), whose mother resided (or delivered) in zip code z at time t. The variable $Hisp_{izt,G_1,}$ is a dummy equal to one when the first-generation woman delivering between 1970 and 1985 was born in Cuba, Mexico, or Puerto Rico. The set of individual socio-demographic characteristics of the first-generation mothers is delineated in X_{izt,G_1}, including education (high school dropout, high school graduate, some college, and college or more), marital status, parity, race, age dummies (in Florida, the mother age is not available for the period 1970–1985), an index of the adequacy of prenatal care based on the month in which prenatal care began, father age (quadratic), father education (high school dropout, high school graduate, some college, and college or more), child gender, and type of birth (singleton vs.

Table 1
Descriptive statistics.

	2nd Generation (G2),1970–1985			3rd Generation (G3),1989–2009		
	Mean	*S.d*	*Observations*	*Mean*	*S.d.*	*Observations*
Female child	0.49	0.50	4,704,571	0.49	0.50	2,076,487
Marital status (apparent status)	0.88	0.33	4,704,273	0.81	0.39	2,076,438
Adequate prenatal care	0.62	0.49	4,514,266	0.85	0.35	2,037,796
Parity	1.23	1.47	4,633,073	0.91	1.10	2,073,619
Multiple birth	0.02	0.13	4,679,958	0.03	0.16	2,076,487
Maternal age	24.92	5.26	3,312,788	24.72	5.06	2,076,340
Paternal age	27.81	6.32	3,229,460	27.55	6.09	1,924,394
Maternal education						
Less than high-school	0.26	0.44	1,287,632	0.22	0.41	2,050,522
High-school degree	0.43	0.49	1,287,632	0.36	0.48	2,050,522
Some college	0.19	0.40	1,287,632	0.24	0.42	2,050,522
College	0.12	0.33	1,287,632	0.18	0.38	2,050,522
Paternal education						
Less than high-school	0.21	0.40	1,193,534	0.21	0.41	1,804,608
High-school degree	0.39	0.49	1,193,534	0.42	0.49	1,804,608
Some college	0.20	0.40	1,193,534	0.19	0.39	1,804,608
College	0.21	0.40	1,193,534	0.18	0.39	1,804,608

Notes: Data are drawn from the California and Florida Vital Statistics, (1970–1985, 1989–2009).

multiple birth). Information on parental education, age, marital status and parity is not available in all years under analysis (see Table 1). To retain the sample size, I assign a specific value to individuals with missing information and include indicators for missing information on parental education and age, marital status, and parity.

Note that as in the empirical analysis I control for education using four educational dummies, a woman with missing education receives zero for all education dummies and then has a dummy variable equal to one for missing information on education. Finally, I control for both time τ_{t,G_2} and zip code ζ_{z,G_2} fixed effects.

Next, I turn to the analysis of the linked sample and analyze whether these differences persist over time and whether they are transferred to the children of third-generation immigrants. Formally, I estimate the following model:

$$H_{izt,3} = \alpha + \beta Hisp_{izt,G_1} + \gamma X_{izt,G_2} + \tau_{t,G_3} + \zeta_{z,G_3} + \varepsilon_{izt,G_3}$$

where the subscripts G1, G2, and G3 represent the first, second, and third generations, respectively. The parameter $H_{izt,3}$ is a birth outcome of the third-generation child (for both females and males), whose mother resided (or delivered) in zip code z at time t and all variables are as previously defined.

3. Results

Table 2 presents the matching rates for the main racial and ethnic groups in the sample. Despite the high rate of matching, the linked sample is not representative of women (men) born between 1970 and 1985. The final sample includes 1,355,896 (46%) of the 2,952,909 female children born between 1970 and 1985 in California and Florida. This reflects the reality that not all the women born in California and Florida between 1970 and 1985 were still living in those states between 1989 and 2009 and that not all these women became mothers before 2009.

The matching rate among children of Hispanic origin is 56%. The matching rate also depends on socioeconomic background, which is clearly associated with infant health, mobility, and the age of the mother at first birth. Children of first-generation mothers who were residing in poor zip codes (in the lowest income quartile) are more likely to be linked to the records of their offspring than those of first-generation mothers who were living in wealthier zip codes (in the highest income quartile).

These results are consistent with the mobility and fertility patterns found using other datasets. In particular, the Natality Detail Data, which contain information on the mother state of birth and the state of birth of the child, indicate that approximately 13.2% of women born in California and Florida between 1970 and 1985 had a child in a different U.S. state before 2004 (the last year for which both the information on the state of birth of the mother and the state of birth of the child are available in this database). According to the American Community Survey (2010), we know that approximately 37% of women born in California and Florida between 1970 and 1985 had not had a child by 2009. Data problems such as misspelled or missing information account for the remaining attrition. Although these descriptive statistics provide evidence of selection on sociodemographic characteristics (see column 3), the differences in initial health endowments between linked and non-linked observations, if anything, suggest that the linked sample has a slightly lower incidence of low birth weight. A 100-g increase in birth weight only increases the probability of a subsequent observation by 0.6%. However, if the mother was born with a weight below the 2500 gram threshold, she is 15% less likely to be linked. The lower incidence of low birth weight (LBW) in the linked sample can be explained by higher rates of infant mortality, higher probabilities of returning to the family country of origin ("salmon bias"), or by a lower probability of having a child among those children born with poor health outcomes (Abraido-Lanza, Dohrenwend, Ng-Mak, & Turner, 1999).

Table 2 illustrates the Hispanic paradox in birth outcomes. Panel A uses the records of children born between 1970 and 1985 and reports the differences between children (G2) of first-generation Hispanic women and children of white mothers born in the U.S. Panel B uses the records of children born between 1989 and 2009 whose mothers were born in California and Florida between 1970 and 1985 and analyzes the differences between children (G3) of second-generation Hispanic women and children of second-generation white mothers.

After restricting the analysis to children born between 1970 and 1985 to white mothers and Hispanic first-generation immigrant mothers coming from Cuba, Puerto Rico, and Mexico, the final sample includes 4,704,571 births for which information on birth weight is not missing. This number includes male and female births and therefore is approximately twice as large as the number of observations presented in Table 1, which includes only the birth

Table 2
Matching quality of linked sample: Second-generation women born in California and Florida, 1970–1985 (G2).

Sample:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Observations			Birth weight (in grams)				Incidence of low birth weight (below 2500 grams)			
	Overall	Linked	Matching rate	Overall	Linked	Nonlinked	t-statistic	Overall	Linked	Nonlinked	t-statistic
Overall	2,952,909	1,355,896	0.46	3274	3275	3,272	5.22	0.072	0.067	0.076	−29.66
US-born whites	2,082,743	859,326	0.41	3300	3318	3,286	41.03	0.067	0.056	0.074	−51.15
Us-born blacks	318,419	237,975	0.75	3067	3076	3,041	13.95	0.131	0.125	0.146	−14.98
Hispanics	348,164	193,261	0.56	3315	3332	3,294	20.82	0.053	0.046	0.063	−21.45
Cuba	37,081	17,645	0.48	3303	3308	3,298	1.78	0.058	0.051	0.065	−5.49
Mexico	283,822	163,812	0.58	3332	3347	3,312	17.40	0.05	0.044	0.06	−18.64
Puerto Rico	27,261	11,804	0.43	3160	3166	3,156	1.56	0.079	0.07	0.085	−4.57
Zip-code level income:											
1st income quartile	471,251	236,068	0.5	3252	3255	3248	4.50	0.076	0.071	0.082	−13.46
2nd income quartile	542,832	267,325	0.49	3251	3253	3249	2.54	0.079	0.074	0.084	−13.00
3rd income quartile	796,457	360,497	0.45	3273	3276	3271	3.94	0.072	0.067	0.076	−14.41
4th income quartile	700,271	296,500	0.42	3299	3300	3298	0.91	0.064	0.059	0.068	−14.26

Notes: Data are drawn from the California and Florida Vital Statistics, (1970–1985, 1989–2009). The linked sample is composed of all the women born between 1970 and 1985 for whom I was able to link the information available at their birth to the birth records of their children born in California and Florida between 1989 and 2009.

Table 3
Hispanic Health Paradox in birth weight (BW) and low birth weight incidence (LBW).

Dependent Variable:	Birth weight (in grams)		Incidence of low birth weight	
	(1)	(2)	(3)	(4)
Panel A: 2nd generation (G2), 1970–1985				
Second-generation Hispanics (G2)	−3.498***	17.135***	−0.007***	−0.014***
	(0.830)	(0.978)	(0.000)	(0.000)
Sociodemographic controls	NO	YES	NO	YES
Mean of Dep.Var.	3,377.67	3,377.67	0.057	0.057
Std.Dev.	568.435	568.435	0.232	0.232
Observations	4,704,571	4,086,426	4,704,571	4,086,426
Panel B: 3rd generation (G3), 1989–2009				
Third-generation Hispanics (G3)	−41.615***	−24.208***	0.000	−0.001
	(1.895)	(1.411)	(0.000)	(0.001)
Sociodemographic controls	NO	YES	NO	YES
Mean of Dep.Var.	3358.716	3358.716	0.061	0.061
Std.Dev.	577.542	577.542	0.24	0.24
Observations	2,036,326	1,979,723	2,036,326	1,979,723

Notes: Data are drawn from the California and Florida Birth Records (1970–1985, 1989–2009). All estimates include state and year fixed effects. The reference group is the sample of children born to US born white mothers. Socio-demographic controls include child gender, parity, type of birth, year of birth fixed effects, mother age dummies, father age (quadratic), mother marital status, an indicator of adequacy of prenatal care, mother education (4 groups dummies), father education (4 group dummies), zip code fixed effects, and indicators for missing variables: mother age, father age, mother education, father education, marital status, parity.
** $p < 0.05$, * $p < 0.1$.
*** $p < 0.01$.

Table 4
Hispanic Health Paradox in birth weight (BW) and low birth weight incidence (LBW).

Dependent Variable:	Birth weight (in grams)		Incidence of low birth weight	
	(1)	(2)	(3)	(4)
Panel A: 2nd generation (G2), 1970–1985				
Cuba	−7.911***	3.572	−0.008***	−0.008***
	(2.359)	(3.000)	(0.001)	(0.001)
Mexico	0.980	23.132***	−0.008***	−0.015***
	(0.895)	(1.043)	0.000	0.000
Puerto Rico				−117.796***
−93.978***	0.012***	0.006***		
	(4.788)	(4.890)	(0.002)	(0.002)
Sociodemographic controls	No	Yes	NO	Yes
Mean of Dep.Var.	3,377.67	3,377.67	0.057	0.057
Std.Dev.	568.435	568.435	0.232	0.232
Observations	4,704,571	4,086,426	4,704,571	4,086,426
Panel B: 3rd generation (G3), 1989–2009				
Cuba	−61.677***	−54.214***	−0.001	0.004*
	(3.591)	(5.238)	(0.002)	(0.002)
Mexico	−30.997***	−11.997***	−0.001**	−0.003***
	(1.331)	(1.494)	(0.001)	(0.001)
Puerto Rico				−166.035***
−171.529***	0.028***	0.028***		
	(4.641)	(4.820)	(0.002)	(0.002)
Sociodemographic controls	NO	YES	NO	YES
Mean of Dep.Var.	3358.716	3358.716	0.061	0.061
Std.Dev.	577.542	577.542	0.24	0.24
Observations	2,036,326	1,979,723	2,036,326	1,979,723

Notes: Data are drawn from the California and Florida Birth Records (1970–1985, 1989–2009). All estimates include state and year fixed effects. The reference group is the sample of children born to US born white mothers. Socio-demographic controls include child gender, parity, type of birth, year of birth fixed effects, mother age dummies, father age (quadratic), mother marital status, an indicator of adequacy of prenatal care, mother education (4 groups dummies), father education (4 group dummies), zip code fixed effects, and indicators for missing variables: mother age, father age, mother education, father education, marital status, parity.
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$

records of women who might potentially be linked to the birth records of their offspring.

The coefficient reported in columns 1 and 3 of Table 3 describes the unconditional mean differences in birth weight and incidence of low birth weight, respectively. Columns 2 and 4 include a broad set of socio-demographic controls. Second-generation children of Hispanic origin have a heavier birth weight ($+17$ g) once I account for socio-demographic characteristics and a lower incidence of low birth weight (-1.4 percentage points).

In Panel A of Table 4, I report separate coefficients for the three main source countries of Hispanics in the US. Among children of Cuban mothers, there are no significant differences in birth weight, but there is evidence of a lower incidence of low birth weight. Children (G2) of Mexican mothers (G1) are only slightly heavier (approximately 23 grams, column 2) but exhibit a significantly lower incidence of low birth weight than the children of white native mothers who share similar socioeconomic backgrounds (column 4). By contrast, Puerto Rican mothers are more likely to give birth to lighter babies. It is important to note that the addition of geographic controls (county, hospital or zip code fixed effects) is associated with a stronger advantage in terms of a reduced risk of low birth weight for children of Hispanic origin. This is consistent with the original definition of the epidemiological paradox: children of Hispanic immigrants fare considerably better than children of non-Hispanic women sharing a similar socioeconomic background. There remains a "healthy immigrant effect" when considering the incidence of low birth weight. However, there is only a difference of 23 grams in the average birth weight. In summary, columns 2 and 4 of Panel A in Tables 3 and 4 demonstrate that the healthy immigrant effect in infant outcomes is mostly concentrated in the lower tail of the birth weight distribution. This is confirmed when using quantile regressions that indicate that the advantage in birth weight (in grams) is more substantial in the left tail of the birth weight distribution. In the 5% quantile of the distribution, the children of Cuban mothers weigh 70 g more on average than children of white native mothers and are 60 g heavier on average in the 10% quantile. Note that the 0.05 quantile corresponds approximately to the traditional threshold of low birth weight. Similarly, children of Mexican origin weight 56 g more in the 5% quantile of the distribution, while children of Puerto Rican origin are lighter than their native counterparts along the entire birth weight distribution. In the quantile regression, I include gender, marital status, adequacy of prenatal care, parity, type of birth, year fixed effect, state fixed-effects, maternal education, and a quadratic term for age (see Table 5).

Panel B, in Table 3 illustrate the differences in birth weight and incidence of low birth weight between third-generation children (G3) whose grandmothers (G1) were born in Cuba, Mexico or Puerto Rico, and third-generation white natives (G3) whose grandmothers (G1) were born in the U.S. Note that the sample analyzed here includes only second-generation mothers between 1970 and 1985 in California and Florida who were babies in the second-generation sample. To ensure the comparability of the analysis, the model includes the same set of controls employed in the analysis of second-generation birth outcomes.

Table 5
Hispanic health paradox in birth weight (BW) and birth weight (in g), Immigrant-Native Differences, Quantile Regression.

| | 2nd Generation (G2), 1970–1985 | | | | |
	OLS	Q5	Q10	Q90	Q95
Cuba	− 2.207	70.242***	56.952***	− 55.067***	− 56.477***
	(2.127)	(0.268)	(0.118)	(0.821)	(0.123)
Mexico	8.944***	56.699***	29.000***	− 26.319***	− 27.970***
	(0.829)	(0.103)	(0.046)	(0.325)	(0.048)
Puerto Rico	− 113.990***	− 56.301***	− 85.000***	− 142.000***	− 141.477***
	(6.739)	(19.807)	(11.932)	(9.944)	(14.255)

Notes: Data are drawn from the California and Florida Birth Records (1970–1985). All the regression include controls for gender, marital status, adequacy of prenatal care, parity, type of birth, 4 educational dummies, a quadratic in age state and year of birth fixed effects. The reference group is the sample of children born to US born white mothers.
** $p < 0.05$, * $p < 0.1$.
**** $p < 0.01$.

The deterioration in birth outcomes is primarily evident in the incidence of low birth weight; even when analyzing differences in birth weight, the coefficients are always negative and larger in magnitude compared with those of second-generation immigrants. The average incidence of low birth weight is relatively stable among second- and third-generation white natives, but the coefficient (− 0.001) for the third-generation children of Hispanic origin (column 4) declines significantly compared with that observed among second-generation children in column 4 of Panel A (-0.014). Panel B of Table 4 shows that the third-generation children of Mexican origin do retain some of the initial health advantage with respect to the incidence of low birth weight.The deterioration with respect to native birth outcomes is stronger among children of Cuban and Puerto Rican origin.

4. Discussion and conclusion

Using longitudinal data linking the birth records of second and third-generation Hispanics born in California and Florida (1970–2009), this study presents new evidence on the generational decline in the birth outcomes of immigrant descendants of Hispanic origin in the US. Children of first-generation Hispanic immigrant women have lower incidence of low birth weight and heavier average birth weight than children of US born white women. These differences become larger when controlling for socio-demographic characteristics. However, there are marked differences by country of origin. While there is a large advantage among second-generation children of Mexican and Cuban origin in terms of lower incidence of low birth weight, second-generation children of Puerto Rican origin fare worse health at birth than children born to US-born white mothers. Third-generation birth outcomes converge to the birth outcomes observed among children of US-born white women. However, even for the third-generation there is important heterogeneity by country of origin. Children of Mexican origin maintain a slight advantage in terms of lower incidence of low birth weight. Third-generation Cubans and Puerto-Ricans fare instead worse health at birth than children born to US-born white women and the generational decline observed in these populations is larger than among children of Mexican origin.

The main advantage of this study with respect to the extant literature is the possibility to provide new evidence on the Hispanic paradox in birth outcomes using intergenerational individually linked data drawn from administrative birth records. This allows overcoming some of the methodological limitations of previous studies working with cross-sectional data only. Another important strength of this paper is that it allows identifying second and third-generation immigrants, distinguishing them from higher-order generations of Hispanics. In addition, the data allow a separate analysis of the health trajectories of Hispanics descendants coming from the three major source countries, while most previous studies are limited in their ability to break down the health trajectories by country of origin because of the relatively small sample size or the lack of information on maternal country of birth (Jasso et al., 2004). Yet, this research presents important limitations. First, birth weight is the only outcome observed throughout the period and this limits the ability to consider more comprehensive metrics of fitness at birth. Furthermore, as mentioned above, data drawn from a linked sample of administrative records do not allow to extensively analyzing the possible role of individual economic characteristics (e.g., occupation, income) and behaviors (e.g. dietary habits etc.) that may importantly affect birth outcomes (Guendelman & Abrams, 1995). In addition, before 1989 there is a high frequency of missing information on key control variables such as parental education and age.

Similarly, information on anthropometric characteristics and maternal behaviors became available in the data only in the more recent years and cannot be used in an intergenerational study. Thus, the possibility of investigating the mechanisms underlying the observed trajectories in birth outcomes is limited and goes beyond the scope of this empirical study.

Compared to previous studies (Fryer & Levitt, 2004; Currie & Moretti, 2007), the quality of matching for children born in California and Florida between 1989 and 2009 whose parents were born in the same states between 1970 and 1985 is relatively high: 96.6% in Florida and 87.5% in California.

Yet, the linked sample is not representative of all the women born between 1970 and 1985. Furthermore, though California and Florida are two of the top-destination states for immigrants of Hispanic origin in the US, the results may not be directly generalizable to other contexts.

Overall, the results presented in this study suggest that the different extent of immigrant selection as well as the different exposure to cultural and behavioral protective factors in the country of origin and in the US play an important role in determining immigrant health trajectories in the destination country.

However, given the limitations mentioned above there is a gap that needs to be filled by further research. Future studies may exploit the growing availability of information on maternal behaviors in Vital Statistics as well as information drawn from the birth records in the country of origin to explain the important

differences in the health trajectories of Hispanics in the US. Understanding the mechanisms behind the heterogeneous health assimilation of Hispanics in the US can help informing policies aimed at protecting the initial advantage observed among children of first-generation immigrants in the US.

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