Why does the health of Mexican immigrants deteriorate? New evidence from linked birth records☆

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ABSTRACT

This study uses a unique dataset linking the birth records of two generations of children born in California and Florida (1970–2009) to analyze the mechanisms behind the generational decline observed in birth outcomes of children of Mexican origin. Calibrating a simple model of intergenerational transmission of birth weight, I show that modest positive selection on health at the time of migration can account for the initial advantage in birth outcomes of second-generation Mexicans. Moreover, accounting for the socioeconomic differences between second-generation Mexicans and white natives and the observed intergenerational correlation in birth weight, the model predicts a greater deterioration than that observed in the data. Using a subset of siblings and holding constant grandmother quasi-fixed effects, I show that the persistence of healthier behaviors among second-generation Mexican mothers can explain more than half of the difference between the model prediction and the observed birth outcomes of third-generation Mexicans.

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1. Introduction

With a population of 31.8 million in 2010, Mexican descendants comprise 63% of the US Hispanic population and 10% of the total US population, with births overtaking immigration as the main source of population growth. Immigrants of Mexican origin constitute one the most disadvantaged immigrant groups in terms of socioeconomic status, and the pace of their earnings assimilation is considerably slower than that of other immigrant groups (Duncan and Trejo, 2011b). Mexicans are generally characterized by lower socioeconomic status compared to the natives, and hence, given the poorer average health conditions in Mexico [e.g., life expectancy and incidence of low birth weight (LBW), among others] and evidence of positive socioeconomic gradient in health, they can be expected to be at higher risk of negative health outcomes. However, although the Mexicans are one of the most disadvantaged immigrant groups in the country, a substantial body of research has documented them as healthier than the natives along several dimensions. Furthermore, despite positive socioeconomic assimilation, previous studies have shown that their initial health advantage deteriorates with the time spent in the United States and erodes in the next generation. For these reasons, previous scholars have referred to these stylized facts as the "Hispanic health paradox."

This apparent paradox has been observed in terms of general health status, life expectancy, mortality from cardiovascular diseases, cancer, age of puberty, and infant outcomes (Markides and Coreil, 1986; Antecol and Bedard, 2006; Bates and Teitler, 2008; Elder et al., 2012; Powers, 2013; Giuntella, 2016b), and has captured the attention of the media and policy makers (Tavernise, 2013). The goal of this paper is to shed light on the mechanisms underlying these facts.

Previous studies suggest that selection may explain the first-generation health advantage of immigrants (Jasso et al., 2004;

Antecol and Bedard, 2006; Riosmena et al., 2013b). International migrants are not a random sample of their population of origin. Migrants frequently move in search of improved labor market opportunities and health status affects the perceived costs and benefits of migration; crossing the border might be more costly for unhealthy individuals. Moreover, healthy migrants might show higher returns to migration because health may enhance their earning capacities. While most of these studies show health selectivity as one of the main reasons for the Hispanic health paradox, only a few theoretical studies have formally investigated the relationship between health and the migration decision. A handful of empirical studies examining the healthy migrant hypothesis found evidence of a positive but mild selection on health (Crimmins et al., 2005; Barquera et al., 2008; Rubalcava et al., 2008; Ullmann et al., 2011; Riosmena et al., 2013a,b). However, researchers remain puzzled on what causes the subsequent health convergence observed in the second generation.

One possible explanation for these health patterns among the Mexican immigrant population is that health status is only weakly correlated across generations. Because of selection, first-generation immigrants have better health outcomes, but the second generation essentially loses all this initial advantage through a natural process of regression toward the mainstream average (Jasso et al., 2004). Previous studies have shown that negative health selection in return migration, the so-called salmon-bias hypothesis, could also contribute to the Hispanic health paradox (Riosmena et al., 2013a). In particular, Palloni and Arias (2004) suggested that a large part of the lower mortality rates among the Mexican population could be due to selective out-migration. However, Hummer et al. (2007) argue that selective out-migration may not explain the advantages observed in the health outcomes of second-generation children, particularly with regard to first-hour, first-day, or first-week mortality. Finally, several scholars examine the role of behaviors and offer evidence that immigrants initially exhibit fewer risk factors at the time of immigration but engage in riskier behavior once more time is spent in the United States and across generations (Marmot and Syme, 1976; Acevedo-Garcia et al., 2005; Antecol and Bedard, 2006; Fenelon, 2013).

There is a wide set of studies documenting the generational decline in the birth outcomes of Hispanics in the US (Acevedo-Garcia et al., 2004, 2005). Giuntella (2016b) provides new descriptive evidence on the Hispanic health paradox in birth outcomes documenting important differences in the health trajectories of Hispanics of different origins. In a related paper, Giuntella (2016a) finds evidence of a negative relationship between cultural assimilation and health among second generation Hispanics. However, previous studies did not assess the role of selection and regression to the mean in explaining the unhealthy assimilation in adult second-generation and third-generation children.

The goal of this paper is to explain how much of the generational decline in the birth outcomes of immigrant descendants of Mexican origin can be explained by positive health selection at migration and a subsequent convergence to the average health in the population; and whether behavioral and socioeconomic factors mediate immigrant health trajectories. To this end, I present a simple model of selection and intergenerational health transmission to interpret the health trajectories of Mexican immigrants in the United States. Using the country-level differences in health outcomes, I demonstrate that a modest selection on health can explain why children born to first-generation Mexican women have better birth outcomes than those born to US-born women. This is consistent with the evidence of mild positive selection on health found in studies based on information collected in Mexico prior to migration (Crimmins et al., 2005; Barquera et al., 2008; Rubalcava et al., 2008; Ullmann et al., 2011; Riosmena et al., 2013b) and also with

the mild positive selection of women on education (Chiquiar and Hanson, 2005; Moraga, 2011).

This paper exploits a large longitudinal intergenerationally linked data to analyze the birth outcomes of second- and third-generation Mexicans born in California and Florida, two of the top immigrant destination states in the United States, between 1970 and 2009. By linking the birth records of two generations, I am able to investigate the factors affecting the generational decline of birth outcomes among Mexican immigrant descendants. In order to verify whether the erosion of advantage in the third-generation birth outcomes can be explained through a simple process of regression toward the mainstream average, I try to predict the expected incidence of LBW among third-generation birth outcomes based on the observed intergenerational correlation in birth weight and estimates on the intergenerational transmission of health status in the literature. By calibrating the differences in quality of health care based on differences in socioeconomic status, the model not only explains the entire paradox but also overpredicts convergence. Against the non-significant difference observed between third-generation immigrants and white natives, the calibration exercise predicts a fairly large health advantage for natives. In reality, when accounting for the relatively low rate of intergenerational transmission observed in the data and the relatively low socioeconomic conditions they face, third-generation Mexicans are found to exhibit better birth outcomes than that predicted by the model. In other words, accounting for the relatively weak intergenerational correlation in birth outcomes and the socioeconomic conditions of second-generation Mexicans compared with native whites, the calibrated model indicates that the third-generation birth outcomes could be even worse than what the data indicate. Thus, the new puzzle is to ascertain why third-generation birth outcomes do not deteriorate as rapidly as predicted.

From the matched birth records for California and Florida, I find that approximately half of the differences between the model prediction and data can be explained by the persistence of healthier behaviors among the pregnant women of Mexican origin. First-generation Mexican mothers have substantially lower risky behaviors (such as smoking and alcohol consumption) and health risk factors (hypertension) that are known to have serious effects on birth outcomes (Almond et al., 2005; Shireen and Lelia, 2006; Gonzalez, 2011; Kaiser and Allen, 2002; Forman et al., 2009).

Although the risk-factor behavior worsens between the first and second generations, Mexican mothers maintain a sizeable advantage in terms of lower incidence of health risk factors during pregnancy compared to white natives. In particular, second-generation Mexican mothers maintain substantially lower incidence of tobacco use during pregnancy, which is known to be the most modifiable risk factor for LBW (Almond et al., 2005; Currie and Schmieder, 2009). To account for potential endogeneity, I follow the Currie and Moretti (2007) strategy of linking siblings and consider grandmother quasi-fixed effects (QFE) (Mundlak, 1978). Conditioning on tobacco use during pregnancy and accounting for the persistence in healthy behaviors explains at least 50% of the difference between model predictions and the data.

The paper is organized as follows. Section 2 briefly reviews the literature on immigrant self-selection on health. Section 3 discusses the theoretical framework. Section 4 presents the data. Section 5 discusses the calibration exercise. Concluding remarks are presented in Section 6.

2. Immigrant self-selection

A few papers have proposed a framework to analyze the importance of health selection in explaining the Hispanic paradox. Palloni and Morenoff (2001) propose a simple model of selection on health at migration and show that even a moderate degree of selection at