BIRTH OUTCOMES AS A LENS TO UNDERSTANDING THE HISPANIC HEALTH PARADOX

An Undergraduate Research Scholars Thesis

by

ISABELLA NOWLAND

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This project did not require approval from the Texas A&M University Research Compliance & Biosafety office.

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ABSTRACT

Birth Outcomes as a Lens to Understanding the Hispanic Health Paradox

Isabella Nowland
Department of International Studies
Texas A&M University

Research Faculty Advisor: Dr. Maddalena Cerrato
Department of International Studies
Texas A&M University

The research investigates the "Latino health paradox" through the health determinant of birth outcomes and two levels of intersectionality expressed within the context of the cultural, the economic, and the political. The first level of intersection identifies that there are factors behind the identifier "Mexican migrant mother" which provide a more comprehensive understanding of the health paradox. The second level of intersection defines the component of "health". It classifies "life" into three tailored spheres, cultural, economic, and political, seeking to understand the impact of these spheres on the health of the subject, Mexican Migrant Mothers. The cultural sphere embodies nutritional practices, the family, and religiosity. The economic sphere encompasses socioeconomic status, residential enclaves, and income stability. Lastly, the political sphere is associated with affordable healthcare, internal bordering and access to citizenship.

This research found there are multiple reasons why un-acculturated Mexican women with lower socioeconomic status have healthier babies compared to their non-Hispanic counterparts; however, there is one prevalent factor that appears as a causal factor… diet. Newly migrated

families tend to adhere to a more traditional diet consisting of less processed foods, more vegetables, and whole foods than their fellow immigrant counterparts who have resided within the United States for greater periods of time. Prompting the correlation that this diet is related to healthier babies. There are multiple social, physiological, political, and economic factors why immigrants acclimatize to the American diet. Clearly, this is an area for additional future longitudinal study designs and qualitative research to determine a timeframe and factors for American diet acclimatization and its effects on birth outcomes over generations of migrants. This additional study could improve the long-term health of the entire Mexican American culture and reduce the debilitating effects the American diet creates with diabetes, obesity, heart disease, and overall quality of life.

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INTRODUCTION

Migration, transnational social interactions, and the interconnection and reciprocal influence of the cultural, the economical, and the political spheres of human existence have long existed. Yet in the last three decades new technology and shifting dynamics of power have significantly increased, intensified, and transformed multiple aspects of the contemporary dynamics of globalization. Global studies is a multidisciplinary field of study emerging from scholars of different disciplines working on the margins of their own field and creating correlations to other disciples. Global studies emerged in the late 1990s and is an expansive approach when engaging with a problem, crisis, or even a corporation that spans across trans or multinational borders (Wank, 2020). The field seeks to engage with a multidimensional approach that does not mold a problem to fit a single field, yet instead pioneers and readopts previous frameworks to address the unprecedented problems persisting within society. Including problems of poverty, international relations, shifting power and even health. For the reality (which is magnified within the age of technology) is the seemingly national frameworks which are often used when engaging with a phenomena or problem do not suffice in the global context of the 21st century. The research presented below engages the global dynamics of health and the necessary multidisciplinary approach to understanding the problem of the Hispanic Health paradox.

The Issue

The Hispanic Health paradox simultaneously called “the Latino or Epidemiologic Paradox” refers to the relatively good health of recently immigrated Latinos within the United States having better health, despite lower levels of socioeconomic status and education than their

non-Hispanic White counterparts (Camacho-Rivera, 2015). The Hispanic health paradox is not a recent phenomenon and has been well studied within the literature across a range of health outcomes including, mortality, cardiovascular diseases, and preterm birth (Camacho-Rivera, 2015). Health advantage has been observed in particular among Hispanics of Mexican background, particularly Mexican immigrants. For example, research argues that infant mortality (IM) and low birth weight (LBW) for Mexican immigrants are comparable to those of non-Hispanic U.S. Whites, despite Hispanic mothers being more likely to live in lower socioeconomic areas and to have low socioeconomic status (Holliday et. al, 2009). Prompting the questions of why and how the health paradox persists and does this health phenomenon change after several generations Mexican migrants live within the United States?

The leading question of my research alludes to the health context of the United States and the paradoxical health experience many Latino migrants share. Many scholars, in a variety of fields, have written on the health paradox, revealing its multidisciplinary nature. Recognizing the multifaceted composition of both health and the paradox, I have selected a specific determinant, birth outcomes, as the lens to understanding the paradox politically, economically, and culturally over generations of Mexican migrants. The development of the research is rooted in preliminary discussions of a paradox, the population focus within the term "Latino" and defining health through the use of birth outcomes. The three aspects of the issue are conceptualized through a literature review of previous scholarship within the multidisciplinary field of global studies. To address how the issue persists the components are then analyzed through the framework of intersectionality. My research aims to determine the validity of birth outcomes as a lens into the paradoxical health phenomena of Mexican migrants. Additionally, to inquire at what point in generations of Mexican migrants does the practices of the migrants no longer protect the health

of the new babies who now have the reduced health effects of an average American (non-White Hispanic) baby born within a similar social, economic and political experience. Lastly, is adverse health over generations of migrants related to time spent within the United States and if so, why?

Literature Review

Previous literature examining the intersectional relationship between migrants, minority populations, and health, is vast, however, there seems to be a lack of literature on women's health in general across various fields. This limitation is amplified for minority populations such as Hispanic women. Recognizing that term "health" is a broad term that represents various forms and standards. This paper will employ the distinct lens of birth outcomes as a determinant to examine characteristics of the Hispanic health paradox seeking to understand the paradoxical validity.

The risks factors associated with adverse birth outcomes reveal the applicable application of birth outcomes as the health determinant to investigate the health paradox. There are many risk factors associated with birth outcomes including maternal and paternal demographic and genetic factors, pre-pregnancy obesity, and maternal substance abuse (American Reproductive Outcomes, CDC). A key observation to consider for application in this research is the effects of poor nutritional and lifestyle choices and the risk factors of adverse birth outcomes. Other risk factors which also impact nutritional and lifestyle practices are social, economic, and neighborhood influences which contain research associated with adverse birth outcomes (American Reproductive Outcomes, CDC). The multitude of risk factors associated with birth paired with contextual or heightened risk factors for Latino migrants increases the paradoxicality

of research revealing favorable birth outcomes among (foreign-born) Latinos (Vital Statistics, 2002).

Central to the framework of this research is the widely used theory of intersectionality. The concept of intersectionality was born in the context of the feminist theory of power and difference, and of critical race theory. It was K.W. Crenshaw who first coined it in 1991 (Bastia, 2013). Crenshaw sought to use intersectionality "to draw attention to the interconnections, interdependence, and 'interlocking' of these categories of disadvantage" (Brah and Phoenix, 2004; Burman, 2003; McCall, 2005; Valentine, 2007). The theory of intersectionality offers a compound framework to "analyze how different forms of disadvantage intersect and thereby explain the specific experience of certain groups of women based on gender, race, and class simultaneously" (Bastia, 2013).

1. DEFINITIONS

The multidisciplinary approach to the research question allows for a broad use of terms and vocabulary. The three primary fields of research collected include but are not limited to: medical reviews, public health datasets and sociological research. The danger in this variety lies in assuming terms that when applied within one discipline may take on a pointed meaning in another, overgeneralization or homogenization of ethnicities, and data thwarted by limits on macro level considerations in analysis. To mitigate faulty assumptions, the section below is split into three separate components: clarifying the terms discussed within this research, identifying the population of interest, and acknowledging limitations within the definitions used within the research.

1.1 Epistemological Meaning of a Paradox

The genesis of the research question is rooted in the concept of a paradox. Therefore, it is necessary to start the section of definitions answering the question, "what is a paradox?". According to the Oxford dictionary, a paradox is defined in two primary ways in which the relationship between appearances and foundations reverse. First, "a seemingly absurd or self-contradictory statement or proposition that when investigated or explained may prove to be well founded or true" (Oxford Dictionary). Second, "a statement or proposition that, despite sound (or apparently sound) reasoning from acceptable premises, leads to a conclusion that seems senseless, logically unacceptable, or self-contradictory" (Oxford Dictionary). The variability in definitions of paradoxes, particularly to health, are often not explicit creating inconsistencies within research studies (Dolores Acevedo-Garcia, Lisa M Bates, 2008). For example, epidemiologic paradoxes are often defined concerning the average socioeconomic status (SES)

of a population group (Dolores Acevedo-Garcia, Lisa M Bates, 2008). Therefore, it is paradoxical that Latinos have low rates of low birth weight given that, on average, they have a low SES (Dolores Acevedo-Garcia, Lisa M Bates, 2008). Moreover, the term paradox is also used to indicate a residual protective effect of Latinos or foreign-born populations. Differing from the paradoxical effect of SES, the residual protective effect is not and cannot be accounted for by measured variables: demographic, socioeconomic, behavioral, and/or medical risk factors (Dolores Acevedo-Garcia, Lisa M Bates, 2008).

1.2 Epistemological Meaning of Health

The paradoxical health experience derives the question, what is "health" within a universal understanding, and what is *health* in terms of the paradox? The World Health Organization (WHO) defines *health* as "the state of being free from illness or injury" (WHO). However, the term *health* regarding an *epidemiologic paradox* typically refers to, " a pattern of morbidity and/or mortality for a particular group (e.g., Latinos, immigrants) that is at odds with what would be expected given its socioeconomic profile" (Dolores Acevedo-Garcia, Lisa M Bates, 2008). Furthermore, one's health is often correlated to genetic composition, access, socioeconomic status, environmental and social factors. The correlation emphasizes the paradoxical nature of Hispanic health knowing that Hispanics are often less educated, low-income, less wealthy, and have much poorer access to health insurance than non-Latino whites important to note (Princeton, 2016). Therefore, research illustrating Latino's higher life expectancy at birth than whites is surprising (Princeton, 2016). The widespread social gradient of health in the United States reveals that those of higher socioeconomic status (on average) live longer than those of lower socioeconomic status, prompting the question, why does a different trend persist within Hispanic migrants?

1.3 The Population of Study

To identify the population of interest within this research it is first necessary and essential to not simply infer that readers have a consistent understanding of "Latino", "Hispanic" or "immigrant". For example, the health paradox is paired with "Immigrant", "Latino", "Hispanic", and "Mexican", which result in overt generalizations of a diverse population with distinct cultural, linguistic and national origins. The term "Hispanic" is identified within the United States census as, "a person Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race" (Bureau USC, 2009). This definition differs from Latino or Latinx which is often thought to be a synonym for Hispanics. Scholars of various fields, primarily sociology, public health, and medical research, seek to define the population within the context of their proposed research. Roberto Valdeón, a professor of English at University of Oviedo, Spain, recognized the cross cultural inconsistencies of terminology in his book *terminology.* There he notes that Latino is a "self-chosen pan-ethnic identity marker" regarded as an attempt to promote an alternative to the "artificial bureaucratic homogenization" of the Hispanic population (Valdeón, 2013). The homogenization of the "Hispanic" population is an issue within previous research and a common colloquial error. The error arises in the term, "Hispanic" homogenizing a very diverse population.

The term "Hispanic" represents a multitude of ethnicities, illustrated within the U.S. census, each with a unique cultural identity and customs. Approximately 18 million Hispanics in the US are foreign-born and almost 13 million of them are non-US citizens (Bureau USC, 2009). Hispanic immigrants come from over 20 countries and there are significant differences in health needs and health outcomes among them (Bureau USC, 2009). It is important to note that along with varying ethnicities Latinos/as are also black (*trigueño/a)*, white (*café con Leche)*, or a

fusion of the two (Dolores Acevedo-Garcia, Lisa M Bates, 2008). For example, in the 2000 U.S. Census, Cubans largely (84.5%) identified themselves as "white" compared to about 58.6% of Dominicans, 45% of Mexicans, and 38% of Puerto Ricans self-identifying as "others," (Dolores Acevedo-Garcia, Lisa M Bates, 2008).

The standardized forms of reporting characteristics of Hispanic research populations are often absent leading to repetitive homogenization of a heterogeneous population. Furthermore, this consistent error results in potentially negative consequences in the ability to apply research within the medical field (Aragones, 2014). For example, the prevalence of hypertension and diabetes varies significantly among Hispanics by country of origin (Aragones, 2014). Therefore, the practice of generalization results in potentially negative effects in applied initiatives across a heterogeneous population. Recognizing the degree of variability within the "Hispanic" population, health research must include representation from all Hispanic subgroups to assess characteristics and provide applicable findings for population-based health improvements (Bureau USC, 2009). However, scholars also argue that complete disregard of the commonalities which exist between subgroups of the Hispanic population should not be forgotten or eliminated. The heterogeneity of the groups does not make shared practices invalid, and simultaneously, does not make diversity within each subgroup void. Many of the differences of subgroups incorporation into society rests on the history of their reason for migration, due to their home country of origin (Dolores Acevedo-Garcia, Lisa M Bates, 2008). In seeking to avoid generalization, the subgroup population within this research is the growing minority group of Mexican migrants within the United States. However, in an effort to maintain consistent terminology, the term used to include Mexican migrants in discussing research will be "Non-U.S. born Latinos/as".

Research regarding Latino health requires an understanding of the makeup of the identifying term, the context of Latino immigration, and the process of immigration adaptation within the United States (Dolores Acevedo-Garcia, Lisa M Bates, 2008). Therefore, this multidisciplinary approach firstly requires background as to who the "Hispanic" population within the United States is today. Data from the U.S. Census Bureau, reports as of 2019 the U.S. Hispanic population totals 60.6 million, a 930,000 increase from 2018, and up from 50.7 million in 2010 (Bureau, US Census, 2020). Previous data, according to tabulations of the 2010 American Community Survey (ACS) by the Pew Hispanic Center, reports of the Hispanics in the United States, nearly two-thirds (65%), or 33 million, self-identify as being of Mexican origin (Noe-Bustamante, Luis, et al., 2020). Puerto Ricans make up the nation's second-largest Hispanic origin group yet are no rival with a total of 9% of the total Hispanic population in the 50 states and the District of Columbia Noe-Bustamante, Luis, et al., 2020). Given the dominant size of the Mexican-origin population, this subgroup is often the primary discussion when referring to Latino immigration and health. Besides this Latinos are often not separated or identified by national origin, an important factor to note when researching variations across Latino subgroups.

The explicit identification of the population of research is one part of the clarifications necessary to mitigate cross disciplinary inconsistencies and uncontextualized analysis. For example, the term health is in relationship with a multitude of determinants, many of which have been or in the process of discovering the relationship within the Hispanic health paradox. In seeking to provide a more narrowed lens within a macro-level problem as heath, the population is narrowed to Mexican migrants along with the health determinant to birth outcomes.

1.4 The Use of Birth Outcomes as a Determinate to Understand the Paradox

Before addressing literature on the topic it is also necessary to identify the meaning of the determinant. “Birth outcomes” within this research refers to a newborn’s 5 potential health issues: premature births, low birth weights, birth complications due to preexisting health conditions, and birth mortality. A premature birth defines babies born alive before 37 weeks of pregnancy are completed. There are sub-categories of preterm birth, based on gestational age. Extremely preterm (less than 28 weeks), very preterm (28 to 32 weeks), moderate to late preterm (32 to 37 weeks) (WHO, 2018). Low birth weight defines babies' weight of less than 2500 g (approximately 5.51 lbs.) irrespective of the gestational age (WHO, 2006). Birthing complications due to preexisting health conditions such as diabetes, malnutrition, smoking, alcohol use, drug use, etc. (WHO, 2018). Lastly, birth mortality relating to death during the first year of life.

Birth outcomes are an insightful determinant to approach the paradox for three primary reasons. First, birth outcomes including infant mortality is a key population health indicator (Kim et. al, 2013). Second, birth is a complex intersection of parents’ health, medical care, environmental factors, economic capability, and many others which impact and influence the health of a new life. Third, birth outcomes have lifelong implications for individuals and are unequally distributed globally (Kim et. al, 2013). Therefore, in using birth outcomes as the focus of the research, maternal health of migrant women will be reviewed to see if the paradoxical effects of birth outcomes are related to maternal health changes. Finally, understanding the issues arising within children and maternal health of a subpopulation such as Mexican migrants is important to inform and effectively create policy.

1.5 Two Levels of Intersection

To adequately attempt to address the question of "why" this paradox exists or has come to existence, two levels of intersection must be clearly identified, while simultaneously understood within the same context. The first intersection is a response to answering the question "who does this research apply to?" or the "subject" of the research. It identifies that there are factors behind the identifier "Mexican migrant mother" which provide a more comprehensive understanding of the health paradox. The second point of intersection defines the component of "health". It classifies "life" into three tailored spheres, cultural, economic, and political, seeking to understand the impact of these spheres on the health of the subject, Mexican Migrant Mothers.

The two intersectional experiences provide the structure to the research presented within this paper. First, the intersectionality of the subject of the research is necessary to understand the "who" or population. An understanding of the population of study is vital for the applications of this research and for the conceptualization of the three spheres which impact the "subject" intersection. Therefore, one cannot understand the first intersection without the second, and vice versa. This is a result of the levels of intersectionality interacting and influencing the experience of the other. Therefore, these two levels of intersection are studied individually, however, understood as one within the experience of the Mexican migrant mother.

The intersecting components of the first problem, which are at the core of my research, are: migrants, Latinos, women, and health. This intersection defines the "subject" of the research embodying the female Mexican migrant. The intersection provides the approach to understanding how the interconnections of the various titles, roles or labels, impact the

experience of Latino, particularly Mexican migrant women, and have an effect on migrants' experience within the United States.

The second intersection existing within the health paradox is interaction of three spheres of life that contribute to the framing of "health". Critically analyzing cultural, economic and political spheres as factors both forming the why to "why does this happen" and the narrative (with respect) to which the "why exists". It is recognizable that these spheres metamorphosize upon application and is necessary for explicit definition in applying them to this research. The intersection of the three spheres of influence is the space in which the paradox exists but is not limited to.

The cultural dimension of the research refers to the influence of customs, habits, and norms on Hispanic migrants' traditional nutritional practices, dietary intake, religious affiliation and differing medical practices within the United States. First, the section will examine nutritional practices of Mexican migrants illustrating the necessity to study the impact of food choices in regards to both mother and child health in the United States. Second, the examination of general themes regarding both mothers and children's dietary intake correlated to the level of assimilation or biculturalration of the child within the United States. Third, Mexican migrants religiosity is reviewed to understand the general cultural belief around women, birth and medical practices.

2. CULTURAL INFLUENCES

Culturally, social behavior norms surrounding food consumption cannot be over generalized when discussing Latino migrants due to the wide breath of home origin countries. However, as previously noted this research seeks to isolate migrants migrating from Mexico while simultaneously recognizing the heterogeneous composition of social norms within that population. Therefore, the influence of these cultural practices are often generalizations due to a consistent degree of variance within any population.

2.1 Traditional Diets

It is necessary to identify what the traditional Mexican diet is to then draw conclusions on the potential impact of the American diet resulting in decreasing health benefits. Medical research reveals that there is a draw towards traditional food diets due to food sources typically being localized, therefore, less processed foods. For example, a study seeking to define the traditional Mexican diet and its role in health found, through a variety of data collection tools, general themes within the traditional Mexican diet include “grains and tubers, legumes, and vegetables...maize, beans, chile, squash, tomato, and onion” (Valerino-Perea, Selene et al., 2019). Similarly, research concludes a possible positive benefit of the consumption of a traditional diet is the decreasing likelihood of developing *non-communicable diseases* (chronic diseases) (Rahim, Sibai et al. 2014). This finding is particularly interesting considering that in the United States the leading cause of death is a common *non-communicable disease*- that is, heart disease (Centers for Disease Control and Prevention, 2020). A reality spurred on by the United States diet consisting of high intakes of saturated fat, sugar, dessert and salt, and highly processed foods, not whole foods (Batis, Carolina et al. 2011). Awareness and lifestyle choices

mitigating the development of non-communicable diseases are important for any individual but are heightened within a pregnant woman. Mothers with prior conditions of non-communicable disease such as heart disease face increased probability of adverse birth effects globally and particularly within the United States (American Reproductive Outcomes, CDC). The CDC provides research on child and maternal health identifying both maternal diabetes and obesity as chronic risk factors leading to adverse birth outcomes (American Reproductive Outcomes, CDC). Research states that "maternal diabetes is a well-established risk factor for birth defects, causing malformations in most organs. [Secondly], maternal pre-pregnancy obesity has been associated with increased risk for neural tube defects and congenital heart defects (American Reproductive Outcomes, CDC). Nutrition represents a critical factor in preventing or perpetuating non-communicable diseases. So the following questions become essential to the purpose of this research: To what degree-if at all- do Mexican migrants eat according to a traditional diet? How does this diet, if at all, change once it is adapted to the choice of products and/or retailers available in the United States?

2.2 Food Consumption Matters

Dietary intake is an essential element in evaluating the health of a mother and child. Individual and familial choices of dietary intake often also influence health behaviors such as physical activity, sleep, spiritual and mental health which all impact the onset or continuation of chronic diseases. Research within global health identifies what social and cultural factors influence one's dietary intake and behaviors. Furthermore, research substantially illustrates that parent's eating style and health behavioral choices influence and form children's dietary intake and BMI (body mass index) by what is available within the home (Larsen et al., 2015). Research is accessible on the confirmed belief that children often influence their parents' food purchasing

patterns; however, research does not expound on the further impact children may have on parent's, in particular a mother's dietary impact (Soto et al, 2018). The relational reality of parent (in this case- mother) to child has the proximity for dual influence meaning that not only does the parent impact the child's food consumption (what is bought at the store, cooked, and taught within the kitchen), the child may impact the parent's food consumption (requests made at the store, reluctances to eat traditional foods, biases towards assimilated practices adopted at school). Sandra Soto and four other researchers within the international research journal, *Appetite*, a journal highlighting cultural, social, psychological, sensory and physiological influences on the selection and intake of foods and drinks, research these two directions of influence on the food intake of Mexican migrant mothers (Appetite, 2021).

The researchers engaged in a qualitative study comparing bicultural and assimilated children's influence on their mother's dietary intake/behaviors (Soto et al, 2018). Previous research reveals that mothers tend to consume a lower quality diet when they have a child who is assimilated to the United States culture versus bicultural affiliation (Soto et al, 2018). This finding is rooted in three sociological theories: Social Cognitive Theory (Bandura, 1998), the Ecological Model (Bronfenbrenner, 2009), and Family Systems Theory (Bavelas & Segal, 1982). All three theories reinforce that within the family, children's health behaviors, including diet, are relevant to parent health behaviors (Soto et al, 2018). Children's food preferences can impact what is cooked within the home, for example, children's preferences often conflict with traditional Mexican migrant preferences. This is the result of the "American diet" or common American foods not aligning with a traditional Mexican diet. Interestingly, the internal conflict of diets within a family unit may result in an increased obedience to uphold and instill traditional meals or deviance towards more American foods at home (Soto et al, 2018).

In 2017, Soto and the other researchers provided evidence that a less favorable dietary intake is associated with Latino mothers having a child who has assimilated to the United States, adopting U.S. cultural and food preferences (Soto et al, 2017). This research, however, did not address why this exists and moreover, how this happens. These aspects of understanding provide further explanation on why and how the Hispanic health paradox may persist and are necessary to explore.

In seeking to address these questions in 2018, Soto and the other researchers continued research conducting interviews with 21 mothers of Mexican origin and their children ranging from 10 to 13 years old (Soto et al, 2018). The children were identified within the study as acculturated and bicultural, two factors necessary to determine Latinos dietary intake and behaviors (Soto et al, 2018). John Berry from the American Psychological Association, defines acculturation as "the process by which individuals learn and/or adopt certain aspects of the dominant culture while retraining some or most aspects of their culture" (Berry, 2003). Whereas, biculturalism "represents comfort and proficiency with both one's heritage culture and the culture of the country or region in which one has settled" (Schwartz and Unger, 2010). Using acculturation and biculturalism as the means of differentiation to determine the effects on a mother diet, the new research stayed consistent with previous studies. The findings upheld, "mothers of bicultural children generally had a better dietary quality than mothers of assimilated children. Compared to mothers of assimilated children, mothers of bicultural children reported more daily servings of fruits, vegetables, a higher percent of grocery dollars spent on fruits and vegetables, a lower percent of calories from fat, and less frequent away- from-home eating" (Soto et al, 2018). Secondly, the researchers identify themes within the research collected for

both groups of interest (acculturated and bicultural) and how the same theme is expressed differently.

The themes found within the study include: (1) Child influences on what mothers cook and prepare (2) How mothers did not allow children to influence what mothers cooked and prepared (3) Child influences on mothers' food purchases (Soto et. al, 2018). The use of selected themes provide quantitative comparability between the effects of acculturated children to bicultural children and their influence on their mother's food choices and intake. Feeding styles, how parents (in this case mother's) choose to feed their children, is important to note on how dietary intake is formed. Research concluded, mothers of assimilated Mexican children accommodated their feeding choices to those of their child alter their feeding styles and sustaining "traditional" Mexican feeding style as you eat what is presented to you with no alteration to preference (Soto et al, 2018).

The findings highlight an essential factor when considering the cultural impact on the development on why a health paradox may exist with those who fall within the categorization of Mexican migrants. Firstly, cultural and social factors impact dietary intake which in turn affects mother and child health. Secondly, there is a reciprocal relationship between the identified themes of a mothers' feeding styles and children's food preferences. Thirdly, the study reveals that children's assimilation to American norms of food, the diminishing of a traditional diet have adverse health effects on a mothers dietary impact, that overtime could have generational adverse health effects for both the mother and children. The last factor puts to question the context to which the Hispanic health paradox is analyzed. The paradox is a phenomena for the fact that compared to other ethnicities found in similar or the same socioeconomic status, Latinos or in our case of study, Mexicans, tend to have a better health average. Knowing the impact of

traditional diets and levels of acceleration versus biculturalism, further research is needed to study the relationship between acculturation and biculturalism on other groups of classification within the same socioeconomic status. Differences in traditional diets, level of adherence to traditional diets within feeding styles and cultural influence all have an effect on the generational health of a community.

2.3 Religiosity

As revealed by Sandra Soto's research and various other scholars, it is clear that many cultural factors - like culinary practices and dietary traditions - significantly influence individual and social behaviors that are crucial to the individual and family health. Another cultural factor critical for a holistic understanding of the Hispanic Health Paradox is religiosity. Catholicism is central to the cultural customs and beliefs within the Hispanic culture, making up an increasingly large percentage of the U.S. Catholics (Pew Research Center, 2020). Central to Catholicism is the paramount belief in the respect of the dignity of human life, influencing beliefs and views on birth and in term medical practices. However, it is necessary to note that, the Pew Research Center recently surveyed Hispanic immigrants concluding that "among Hispanic immigrants who say their current religion is different from their childhood religion, roughly half say this change occurred after moving to the U.S." (Pew Research Center, 2020). This stark statistic prompts the question in need of further exploration, "how does shifting religious affiliation and commitment to life influence health conditions and choices over generations of Mexican women?".

2.4 Religions Influence on Medical Practices

Contrary to traditional Western medicine practiced in the United States, "the use of healing remedies and requesting the aid of "healers" also known as curanderos in the Hispanic

culture is common" (Sanchez, 2018). The use of alternative medical practices may be attributed to a variety of situational and ideological factors including, cultural barriers like language and lack of familiarity of American culture norms. These reasons, among many, may cause Hispanics migrants to use self-healing or seek out healers within their own cultural groups rather than assimilate to the traditional medical norms within the United States (Sanchez, 2018).

2.5 Barriers to Latinas' Openness Within Healthcare

A qualitative study, conducted, by the departments of internal medicine and family medicine at the Lutheran medical center in New York, seeks to understand what and why Latina women share or withhold medical information to a physician (Julliard et al, 2008). The research included 28 Latina sharing their experience with Western Physicians revealing six themes: physician- patient relationship, language, physician sex and age, time constraints, sensitive health issues and culture and birthplace (Julliard et al, 2008). Out of the total of 28 Latina women 26 of the women discussed the physician to patient relationship. Emphasizing the importance of relationships of trust with physicians who express traits of compassion, and interest beyond the immediate need. The findings concluded that physicians who created relationships of trust, manifest through not rushing the patient and listening was greatly valued to allow for openness. The importance of this theme is captured within the cultural significance of *personalismo,* displays of mutual respect and trust building, paramount in Hispanic culture within the family, community and even workplace (Medina). Secondly, as previously noted, language barriers create inconsistent flows in conversations and heightened complications with the translator present (Julliard et al, 2008). Thirdly, if the physician was a male and younger in age it adversely affected women from feeling comfortable in sharing personal information (Julliard et al, 2008). Lastly, general inconsideration's of culturally sensitive topics such as

sexuality, and family planning, resulted in regression in sharing (Julliard et al, 2008). Interestingly, the interviews born outside the United States had a greater concern for a female physician and the importance of empathy and understanding between them and the physician (Julliard et al, 2008). The major factors outlined in the study discourage openness with doctors, resulting in possibly inadequate treatment and further health complications only furthering the likelihood of continuing with Western medicine. These reasons, among many, may cause Hispanics migrants to use natural healing practices or seek out advice within their own cultural groups rather than assimilate to the traditional medical norms within the United States (Sanchez, 2018).

2.6 Family and Religion in Practice

The family, central to Hispanic culture, plays a key component in the delivery of healthcare, daily health behaviors and religious practices. *Familismo,* the term used to represent the significance of the family extending beyond the nuclear family (Medina). *Familismo* represents that family needs take precedence and an understanding for mutual reciprocity within the family and community as a whole (Medina). These informal social networks often develop into informal healthcare networks prompting women to often not participate in the Western prenatal care. Latinas are commonly known to work with, *parteras,* lay midwives, rather than traditional doctors due to relationships of respect, generational trust and honoring religious and cultural customs (McGlade et al, 2004). Catholicism supports the notion of *familismo* through habits of prayer within the family and community, all of which are extremely relevant when dealing with health related issues of a loved one. The family's' importance within the faith supports the notion that many Hispanic patients will seek the attention of family members before seeing medical professionals (Medina). The use of the family includes practices of praying to

God for healing and to various Saints to intercede on the loved ones behalf with specialized intentions. For example, for expectant mothers, praying to Saint Gianna, the patron saint of mothers, physicians and the unborn, may be practiced for women as they try to conceive or during their pregnancy. *Fatalism*, the belief that God is in control, at times decreasing one's likelihood of taking action on health related issues and instead trusting in God's sovereignty and providence (Medina). Therefore, it is important for healthcare providers to understand the importance of faith and the family when providing care to many Hispanic women. The practice of not respecting these central aspects of Hispanic culture, more specifically Mexican culture, may deter generations of receiving formalized healthcare.

2.7 The Respect of Life

When thinking about the cultural influences creating the paradox, despite socioeconomic disadvantages Latino infants experience low-birth weight and mortality rates generally lower than the national average, it is necessary to compare to the average non-Hispanic population (McGlade et al, 2004). As discussed above, Hispanic culture, predominantly Roman Catholic, maintains the belief of a respect for life from conception through natural death. This means a culture of life is often respected and honored within the culture and family unit. The emphasis on *materialismo*, devotion to the role as a mother, and other protective factors: a strong cultural support for maternity, healthy traditional diet practices and the inclusion of the extended family as a valuable unit seek to uphold the importance of life, and therefore, birth (McGlade et al, 2004). The lack of respect of motherhood, female support networks, and generational familial presence within the United States creates a different context regarding having children. Furthermore, the shifting trends of delayed marriages, and therefore, greater at risk pregnancy due to women's age and health preconditions such as long time use of birth control and fertility,

all influence the health of birth outcomes. The CDC report *Picture of Birth Outcomes* in the United States comments, “Although fewer pregnancies now end in fetal or infant death compared with the death rate 20 years ago, a higher percentage of births are premature, and more newborns are below the optimum survival weight” (Picture of Birth Outcomes). Therefore, further exploration on the differing cultural practices surrounding the age at which women are married and their openness to childbearing and the impact on the birth outcomes is needed to determine if this is a causal factor influencing the Latino health paradox.

3. ECONOMIC INFLUENCES

Economic influential forces include variables of socioeconomic status, income stability and home location. As noted, intersectionality illuminates the reality that culturally, economic and political spheres are not mutually exclusive, but impact one another. These three spheres are related to social determinants of health that impact Mexican migrants' health. In terms of economic factors, previous research promotes the Latino health paradox through the conclusion that “despite higher poverty rates, less education, and worse access to health care, health outcomes of many Hispanics living in the United States today are equal to, or better than, those of non-Hispanic whites” (Leo et al., 2002). Therefore, how does the average economic status of Mexican migrants affect their dietary intake over time within the United States compared to Mexico? Secondly, how do other factors within the analysis of economic variability such as education levels, and ethnic enclaves affect the health and birth outcomes of Mexican migrant women? Lastly, is the research supporting the economic sphere of the health paradox still relevant today, or is new research needed?

3.1 Socioeconomic Status

Economic influences in terms of socioeconomic status is a fundamental social determinant of health due to the disparities born out of varying levels of socioeconomic status (Flaskerud and DeLilly, 2012). One’s socioeconomic status often determines access to resources, including: money, education, transportation, opportunity, income stability, and healthcare (Flaskerud and DeLilly, 2012). These experiences, or lack of experiences, interact to affect health behaviors such as food consumed, and frequency of medical visits (Flaskerud and DeLilly, 2012). The accessibility of these resources, along with the cyclical cycle of poverty

rooted in lower socioeconomic status, all affect one's protection against adverse health effects and long term consequences of developing both communicable and noncommunicable diseases (Flaskerud and DeLilly, 2012). These consequences unfortunately are not isolated to one person but can have generational effects and adverse health impacts often begin before birth for lower socioeconomic people (Flaskerud and DeLilly, 2012).

3.2 Income Stability

On average, Mexican migrants have lower incomes than both other foreign born migrants and the native born population. According to the Migration Policy Institute, as of 2019, the median annual income of Mexican immigrant homes was $51,000 (Batalova and Israel). This is $13,000 less than the average income of other migrant populations making an annual income of $64,000, and a $15,000 deficit to the annual income of native born households averaging $66,000 (Batalova and Israel). Secondly, Mexican immigrants were more likely to live in poverty with a 17% poverty rate compared to the overall immigrant rate of 14% and the native born population at 12% (Batalova and Israel). In 2017, there were 10.5 million undocumented immigrants in the U.S., including 4.9 million Mexicans (Passel et al.). Undocumented workers, comprised of working immigrants, are often paid hourly and work primarily in agriculture, construction and the hospitality industry (Passel et al.). Researchers estimate the wages of undocumented workers are 42% lower than those of native born and documented workers (Ortega et al., 2020). This is due to a variety of factors including language competency, limited negotiating power and limited education (Ortega et al., 2020). This confirms the assumption that undocumented workers' households have a greater annual income disparity from both documented Mexican migrants, and native born households. The annual income of both

documented and undocumented Mexican immigrants provides a generalized context to the various determinants adversely affecting Mexican immigrant women.

3.3 Ethnic Enclaves: Positive and Negative Health Effects

Ethnic enclaves define, "a geographical area where a particular ethnic group is spatially clustered and socially and economically distinct from the majority group" (Lim, et al.). Ethnic enclaves are both socially and economically interrelated, and reveal yet another point of intersection and influence of spheres. Mexican immigrants often form ethnic enclaves creating deep social and physical networks protecting individuals and families within a new country of origin. It is necessary to investigate the impact of enclaves on Mexican women and furthermore, their birth outcomes to determine if enclaves provide a potential explanation for why the health paradox persists within Mexican immigrant population regarding healthy birth weights and babies. Research conducted in 2007, investigates the positive and negative impact of ethnic enclaves on birth weight (Osypuk et al., 2010). The positive enclave impacts are best seen during pregnancy and correlate to positive birth outcomes. A social network is formed through the family and expanding community. This social network within an enclave sets the norms surrounding health behaviors and practices such as adhering to traditional diets including healthier foods. Furthermore, the support of a wider network creates communal security ensuring that women are not alone during pregnancy (Osypuk et al., 2010). For example, enclaves may act as protective factors surrounding reproductive health. They do this by insulating individuals within the community which protects them from discriminatory exposures of the majority population or other ethnic subgroups potentially causing stress, harm or other adverse health effects (Portes, 2006).

There are also negative effects of enclaves. These effects are primarily caused because most immigrant enclaves or clusters are in poor and deprived neighborhoods (Osypuk et al., 2010). Therefore, poverty spurs a variety of negative factors including crime, instability and lack of access which correlate to adverse health effects and lower birth weights (Osypuk et al., 2010). The negative effects influence birth weight primarily through situational effects of poverty including: deficient nutrition, poor health behaviors like smoking and alcohol consumption, lack of health care such as prenatal care and psychosocial factors like depression and stress (Behrman and Butler, 2007). The research concluded that the positive impacts of ethnic enclaves are not all the same and, in fact, may result in negative impacts over time. Specifically, the research concluded that nativity, where a mother was born, mattered in determining if enclaves would be a positive or negative factor (Osypuk et al., 2010). The findings highlight a supportive factor that assimilation to United States culture, including food practices maintained at low socioeconomic incomes, may be a causal factor for adverse birth outcomes. Moreover, the research identified, "a differential effect of context by nativity, and the potential health effects of ethnic enclaves, which are possibly a marker of downward assimilation, among US-born Mexican-origin women" (Osypuk et al., 2010).

Immigrants are naturally going to be drawn to begin within the protection and necessity of an ethnic enclave when beginning anew in a new country like the United States. Therefore, downward assimilation marks the reality that at a certain point these ethnic enclaves actually create a barrier for Mexican immigrant populations due to the reality that they will "experience less social advancement with increasing generations" (Portes, 2006). The impact of time and time spent living in an enclave, parallels the cyclical nature of poverty and the social determinants that maintain poverty as a reality for a community. Research tracking the receipts

of shoppers at various incomes reveals a correlation between lower income households and poorer nutritional diets (French et al., 2006). Mexican immigrants are on average living in lower socioeconomic statuses with limited social mobility due to a variety of factors including education, language and exposure to opportunities. Secondly, multiple factors of assimilation over time result in the possibility of adopting a more "Americanized diet" at a low income. The traditional American nutritional intake is already deficient then adding the restraint of low income, only increases the likelihood that over time Mexican immigrants will choose to adopt or by necessity will have to move to a more processed diet. This shift results in the consumption of less fruits, veggies and whole grains found in a traditional diet and increasing intake of foods such as cereals, pasta, potatoes, legumes, and fatty meats (Drewnowski and Eichelsdoerfer, 2009). The change in diet influenced by countless factors mentioned within this research such as children's preference, happen generationally, supporting two ideas of thought surrounding the health paradox. First, following immigration families are more likely to adhere to traditional diets and nutritional practices, a factor supporting healthier birth outcomes. However, "unhealthy assimilation" regarding diet and food preferences change over time with greater assimilation negatively impacting birth outcomes through poorer nutrition. Researchers conclude duration of time within the United States correlates to a decrease of healthy eating (Van Hook et al., 2018). This is due to the process of immigrant integration defined through an increase in English language proficiency and the movement of living outside immigrant enclaves or time spent outside enclaves, which is likely to increase unhealthy eating through greater social interactions with U.S. born populations (Ayala et al., 2008). The duration of time spent in the United States may result in the movement of immigrants and their families out of ethnic enclaves, or at the least greater exposure to the U.S. born population (Van Hook et al., 2018). This exposure occurs

through encountering, “more diverse employment sectors, neighborhoods, schools, and social networks”, resulting in the adoption of, “the eating habits of their American colleagues, acquaintances, and neighbors” (Van Hook et al., 2018). Therefore, the benefits of enclaves must be looked at overtime to decipher if the positive impacts, especially adherence to traditional diets, are useful in seeking to explain the “how” of the paradox.

4. POLITICAL INFLUENCES

Politics, embodying availability of affordable healthcare, implicit bordering, and access to citizenship rights are another intersection point within the Hispanic Health Paradox. Political influences are both the cause and response to both economic realities and cultural developments. The political sphere in relation to health includes health insurance due to access to health insurance within the United States being closely correlated to employment and citizenship.

4.1 Health Insurance

Health insurance is essential due to the protection it allows an individual or family. Health insurance provides financial protection in case of an emergency, and can allow for essential and at times lifesaving care. Moreover, if an individual has health care coverage they have the freedom to go to the doctor to receive care when needed without the fear of expense. These more frequent visits also allow for checkups and regulatory screening decreasing the development of adverse health ("Harvard Health"). Data from the U.S. census in 2019, reveals that Mexicans have lower health insurance coverage rates than non- Hispanic whites ("Office of Minority Health"). The census Bureau concluded, "50.1% of Hispanics had private insurance coverage, as compared to 74.7% for non-Hispanic whites" ("Office of Minority Health"). Among Hispanic subgroups, coverage varied, however, Mexicans Americans had only a 47.9% insured population ("Office of Minority Health"). The reasons for limited or no access to healthcare are multifaceted and cannot be understood singularly. Barriers are best understood through three main pathways: financial, structural and personal (Leo et al., 2002).

4.2 Barriers to Healthcare: Financial

As noted previously, finances, and furthermore a lack of funds act as a major deterrent to health care coverage. Health care coverage is often included with employment. Therefore, if Mexican immigrants are working hourly jobs or jobs without formalized healthcare plans affordability of insurance is often unattainable (Perry et al., 2000). Furthermore, Mexican migrants, like other populations within the United States, may fall within these three categories of uninsured individuals. First, young adults who are healthy and choose to limit expenses by not purchasing health insurance through their employer ("Who Are the Uninsured?"). Second, poor middle class individuals who do not qualify for Medicaid ("Who Are the Uninsured?"). Thirdly, individuals who own their own business and do not purchase health insurance (Perry, et al., 2000). Uninsured individuals who find themselves in an emergency or crisis can then face the daunting burden of paying for healthcare at egregious costs. For anyone, but specifically a family of migrants or an immigrant mother giving birth, these bills could result in severe financial and legal implications when unable to pay (Perry, et al., 2000).

4.3 Barriers to Healthcare: Structural

Structural barriers refer to physical obstacles to access including geographic location, lack of transportation, appointment times and a lack of understanding of the healthcare system itself. The structural barriers are intimately correlated with the notion of internal bordering. Internal bordering, within this research, refers to the intangible borders produced within a community both natural and implicit action. Naturally, in the sense that people find community with those similar to them (race, religion, etc.), therefore, it is natural that immigrants would prefer to live in ethnically homogenous communities (Ayón, 2015). However, this may be by choice or through housing discrimination (Ayón, 2015). The implicit nature of internal bordering

includes informal means of discrimination, including housing and neighborhood location, norms of what schools immigrants go to, where to shop and socialize (Ayón, 2015). For example, if a Mexican immigrant family decided to attend a school primarily populated by Non-Hispanic students not accustomed to other ethnicities there may be negative consequences or internal bordering through lack of acceptance, limited in school resources for bilingual learners and social pressures creating separation between them and the other. This differs from external bordering which refers to the physical boundaries established by both the federal and state government that have enforced through formal laws. Internal boarding amplifies the effects of structural barriers to healthcare by creating assumptions on what is deemed socially "acceptable" place for immigrants to live. This has a rippling effect for access to quality doctors and health providers are most likely not within poor immigrant communities. Therefore, access to see health providers requires transportation, potential child care, and time off work during office hours that may be unattainable for a poor family or individual (Leo et al., 2002).

4.4 Barriers to Healthcare: Personal

Barriers to adequate healthcare do not end at the medical professional's office. As noted within the cultural sphere, personal barriers referring to linguistic and cultural differences create further barriers (Juilliard et al, 2008). The outlined barriers provide an understanding of the challenges to receive healthcare and why women may not desire, attempt, or imagine the opportunity for prenatal care or checkups. This furthers the paradoxical nature of Mexican immigrants having healthier babies on average due to prenatal care proving to be essential in ensuring both health for both the baby and mother ("Prenatal Care").

4.5 Pathway to Citizenship

To be able to even receive care, immigrants face foundational barriers like access to citizenship. Access to citizenship, lends itself legal employment, potential employment benefits like health insurance opening the door to healthcare coverage. According to USCIS, an application for permanent residence, or green card, will take anywhere from 7 months to 33 months to process ("Case Processing Times"). After receiving a green card you must have had a permanent resident (Green Card) for at least five years, or for at least three years if you're filing as the spouse of a U.S. citizen before applying for citizenship which is on average another 6 month or year wait ("Case Processing Times"). The process to citizenship is a long journey furthering the barriers to affordable healthcare and access to federally funded programs: Medicaid and Medicare (Wilson, 2020). Through the passing of the 1996 Personal Responsibility and Work Opportunity Act, unauthorized immigrants and most authorized immigrants with less than 5 years of residency within the United State are excluded from receiving federally funded benefits (Gelat and Kollab, 2014). Furthermore, unauthorized immigrants are also excluded from the Affordable Care Act (ACA), furthering the limitations for access to affordable healthcare (Wilson, 2020). The lack of access to affordable healthcare also increases the paradox for Mexican migrants. However, as seen with residential enclaves, it is necessary to analyze the impact of these factors over time. In regards to enclaves, the positive effects were met with adverse health effects over time through the lack of social mobility and cyclical nature of communities of poverty. Therefore, how does the 8 to 10 years waiting for citizenship affect Mexican migrants' health? At what point in time does the paradox become obsolete and how does access to citizenship, internal bordering implications and limited to no healthcare coverage influence this change and result in adverse health?

CONCLUSION

This research investigates the “Latino health paradox” through the use of the health determinant of birth outcomes. The paradox is analyzed through two levels of intersectionality expressed within the context of the cultural, the economic, and the political. The first level of intersection, the “Mexican migrant mother” confirmed that there are notable interdependent levels of disadvantage acting on the subject, therefore, supporting the paradoxical element of better birth outcomes for Mexican migrants. The second level of intersection defines the component of “health” and how it is expressed within the “spheres" of the cultural, economic and political on Mexican migrant women.

The research demonstrates that the paradox is a complex problem and when addressing the paradox cannot be analyzed singularly but must be addressed with a holistic approach. For example, isolating positive birth outcomes to positive effects of residential enclaves fails to address the cultural influences like religion and the respect for life, among others, that positively affect birth outcomes. This conclusion emphasizes the useful multidisciplinary approach to research while also creating a challenge within the research. There are, however, general inconsistencies when cross referencing research and rendering analysis from varying fields of study. Increasing the available number of comparable empirical studies and data sets with consistent definitions of a paradox, the population of interest (Mexican Migrants) and health factors (birth outcomes) is an opportunity for future research. Secondly, an increase in the overall study and applicable research on minority women and women’s health including birth outcomes would better inform the public, policies regarding how to best support minority population’s health and clarity on the validity of the paradox.

Thirdly, the levels of intersectionality cannot be just understood within a snapshot of time but must be understood over time or generations. For example, to correctly analyze if adhering to religiosity once residing in the United States is a causal factor in maintaining the paradox of healthier babies it must be analyzed generationally. Furthermore, generational comparisons within a Mexican immigrant community would be extremely beneficial in determining if and when the paradox becomes obsolete, and what the primary factors resulting in adverse birth outcomes. Birth outcomes prove to be an insightful determinant to approach the paradox due to the health of a society reflected in the health of both mothers and children. Birth parallels the interdependence of a variety of factors, present in this research due to the intersection of parents' health, medical care, environmental factors, economic capability, and many others which impact and influence the health of a new life.

The research confirms that determining the paradox's validity is challenging due to the many variables that influence health on both a communal and individual level. For example, "acculturation, health behaviors and diet, ethnicity, acculturative stress, adolescence, undocumented and uninsured status, age of arrival in the United States and length of exposure, gender and age appear to be significant in predicting any beneficial effects" (Teruya and Bazargan-Hejazi, 2013). Within this variability, the research illuminates the multiple reasons why un-acculturated Mexican women with lower socioeconomic status have healthier babies compared to their non-Hispanic counterparts; however, there is one prevalent factor that appears as a causal factor for further exploration… diet. Newly migrated families tend to adhere to a more traditional diet consisting of less processed foods, more vegetables, and whole foods than their fellow immigrant counterparts who have resided within the United States for greater periods of time. Prompting the correlation that diet is influential in delivering healthier babies.

There are multiple social, physiological, political, and economic factors why immigrants acclimatize to the American diet. This is an area for additional future longitudinal study designs and qualitative research to determine a timeframe and factors for American diet acclimatization and its effects on birth outcomes over generations of migrants. Furthermore, research is needed to investigate the extent to which the Latino health paradox is correlated to Latinos adherence to traditional diets and if this causal factor of diet remains consistent for other ethnic immigrant populations. As discussed throughout this research, a poor diet is correlated to the development of noncommunicable diseases overtime and the weakening of the body to fight communicable disease. Diet, as a factor influencing the overall health of an individual, impacts a woman's ability to best support a child through pregnancy and birth. Furthermore, research reveals that traditional Mexican diets, although not perfect in nutritional value, include greater amounts of fruits and vegetables and less processed foods consequently resulting in better health outcomes.

To further explore diet as a main factor explaining the "why" and "how" behind the Latino health paradox, research should be done to determine if traditional diets in other ethnic immigrant populations also result in positive health effects. Secondly, the research should be studied over time and comparatively to determine the effects of assimilation to the U.S. and the variance between ethnic groups. Based on the research in this paper, I hypothesize loss in consumption of traditional foods and adoption of a lower quality American foods is the primary contributor to the end of the Latino health paradox. However, further research would have to be conducted into this specific hypothesis to determine the primacy of diet. These additional studies could improve the long-term health of Mexican American communities and reduce the debilitating effects the American diet creates with diabetes, obesity, heart disease, and overall quality of life.

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