

A Racial/Ethnic Health Analysis of Mothers and Newborns among U.S. Births in 2006

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ABSTRACT

This study is a racial/ethnic comparison of the over 4 million women who gave birth to live babies in 2006, and the health of the mothers and of these newborns. Using the recently released *2006 Natality Detail File* data, I conducted a racial/ethnic analysis of these women's and newborns' demographic, pregnancy, and medical care and experiences. Other than the governmental statisticians who reported on the basics of these 2006 data, I am one of the first, if not the first, to analyze these data. Overwhelmingly, research on mothers' pregnancies and birth outcomes that have included race/ethnicity, has been limited to a binary of Black and white woman and babies, largely excluding Latinas, as well as Native American/Alaskan Native (NA/AN) and Asian American/Pacific Islander (AA/PI) mothers and their newborns. To my knowledge, my thesis is the first study to conduct racial/ethnic comparisons of mothers and their babies using five race/ethnicity categories: Latina, Black, NA/AN, AA/PI, and white. The findings stress the importance of such expanded race/ethnicity categories for researching pregnant women and their newborns, and provide some support for the Latina Paradox in terms of mothers and newborns.

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CHAPTER I: STATEMENT OF THE PROBLEM

Introduction

It is no secret that people of Color suffer from racism. Over time, scholars have increasingly used research to document the many and nuanced impacts of racism on people of Color.¹ Profoundly, legal and race scholar, Dayna Matthew, in her recently published book, *Just Medicine: A Cure for Racial Inequality in American Health Care* (2015), compiles the research documenting the staggering number of deaths of people of Color that are due to racism in medical responses in the U.S. every year: *between 80,000 and 84,000*. Significantly, in addition to pulling together this existing and very troubling statistical knowledge, Matthew (2015) goes further to provide a clearer understanding of the *implicit race bias* that results in these deaths and other substandard health care for people of Color.

Turning to pregnancy and babies, specifically, studies have shown a significant difference between the ratios of Black and white women's preterm births (PTBs) in the United States, with Black women having twice as many PTBs (Behrman, 2007; Martin, Hamilton, Menacker, Sutton, & Mathews, 2005; Ananth, Joseph, Demissie, & Vintzileos, 2005; Berkowitz, & Papiernik, 1993; Ananth, Joseph, & Kinzler, 2004). It is very difficult not to attribute these disparate findings to significantly raced/racist historical and current individual and structural discrepancies in the United States. That is, be they blatant, aware or subtle/unaware

¹ I follow Hillary Potter's (2015) guideline of capitalizing racial categories that she uses and defines in her book *Intersectionality and Criminology: Disrupting and Revolutionizing Studies of Crime*. Potter capitalizes Black and White, as well as Latina and Asian, because "race is a strong social determinant and a matter of identity (Potter 2015:18). However, I choose not to capitalize white to challenge the power structures of race in the United States. Also, the word Color is capitalized when referencing racial identity (as in women of Color or people of Color) for the same reason as above, which is also consistent with Potter (2015).

racist individual responses or structural disparities, I argue that these Black-white differences in PTBs in the U.S are at least in part, and likely large part, due to various forms of racism (Sue, 2010; Alexander, 2012).

Oddly, Latina women are excluded from and invisible in the majority of these studies on pregnancies and babies' well-being, including the statistics on the rates of preterm births (PTBs) (e.g, Braveman, 2014; Reagan & Salsberry, 2005; Schempff, Kaufman, Messer, & Mendola, 1999-2001; Lieberman, Ryan, Monson, & Schoenbaum, 1987; Goldenberg & Cliver, 1996; Sparks, 2009). However, the little research that has been conducted on Latina women, pregnancy, and birth, indicate important findings between Latina mothers and white mothers. More specifically, Latina and white women have about the same rates of preterm birth (PTB) and low birth weight (LBW), where in some cases Latina women have lower rates (e.g., Hoggat, & Flores, 2011). Conversely, Black women have the highest preterm birth (PTB) and low birth weight (LBW) as compares to Latina and white women. There are many predictors and many social factors have been implied as probable cause, racism has been one of the main predictors, which also functions through many intersecting identities, but has not been fully examined. Racism negatively influences Black and Latina women through out their lives, not solely during pregnancy. However, Latin@s have shown a protective mechanism that keeps their babies healthy (it will be further discussed in later chapters). Therefore, it is logical to say that racism greatly influences the outcomes of a birth.

The trend shown in the studies that include Latinas indicate that Black women have the highest rates of PBT and LBW, followed by Latina women, and white women have the lowest rates. Significantly, a study conducted by the National Vital Statistics Report, *Births: Final Data for 2013*, by Joyce Martin and Brady Hamilton (2015), documented the discrepancies in low

birth weight between races: white women's LBW rate was 6.98%, Latina women's births were 7.09%, while Black women's LBW was almost twice as high at 13.08% (Martin, Brady, & Osterman, 2015). Historically, these rates have been fairly consistent. These findings are astonishing. How can it be that Black women have almost double the percentage of LBW as compared to white and Latina women? And Latina and white women have similar percentages of LBW? As I will address in this thesis, many social factors come into play, such as the mother's socioeconomic status, education, age, race/ethnicity, and health care.

A surprisingly untapped data source to compare Latina pregnancies and births with other racial/ethnic groups of women is the *Nativity Detail File* collected by the U.S. Department of Health and Human Services, Centers for Disease Control, and National Center for Health Statistics. These data are collected approximately every 4 years, and the most recent data, for 2006, was just released to the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan. The University of Colorado-Boulder is a member of the ICPSR, so I was able to access this huge data set to examine racial/ethnic differences in U.S. pregnancies and births. This data set has detailed information on over 1 million Latina women who gave birth in 2006, in addition to the same data on 2.3 million white women, 617,445 Black women, and 42,231 Native American/Alaskan Native women, and 228,106 Asian American/Pacific Islander women. My honors thesis will use this recently released and massive data set to compare the pregnancies and births of women in the U.S., based on the women's race and ethnicity, with a focus on Latina women.

Defining and Documenting Preterm Birth (PTB) and Low Birth Weight (LBW)

I argue that the fetuses of pregnant women of Color are victims of racism, with the racism primarily experienced through their mothers' Black and Brown bodies and transferred to

them. Pregnancy is the condition where a woman carries a developing human in her uterus; it begins with conception and typically lasts an approximation of about 266 days in a sustained pregnancy (Jones & Lopez, 2010:14). Prematurity is defined as a birth before 37 weeks of gestational age; a full term birth is 40 weeks' gestation (Goldenberg, Culhane, Iams, & Romero 2008; Ananth & Vintzileos, 2006, Rappazzo, Messer, Jagai, Gray, Grabich, & Lobdell, 2015). Over 500,000 births in the USA annually are preterm births; giving a rate of 12.5% this staggering statistic translates to roughly one preterm birth every minute in the USA, and prematurity is steadily increasing (Ananth & Vintzileos, 2006; Martin, Hamilton, Menacker, Sutton, & Mathews, 2005; Wright 2011; Slattery & Morrison, 2002; Kogan, Alexander, Kotelchuck, MacDorman, Buekens, Martin, & Papiernik, 2000; Demissie, Rhoads, Ananth, Alexander, Kramer, Kogan, & Joseph, 2001; Ananth, Joseph, Oyelese, Demissie, & Vintzileos, 2005). Low birth weight (LBW) is considered less than 2,500 grams and very low birth weight is less than 1,500 grams (Fulda, Kurian, Balyakina, & Moerbe, 2014). LBW is one of the leading causes of death in the United States (Mathews & Macdorman, 2011). Even among newborns that survive, premature births and low birth weights have long lasting effects, further complicating a child's life (e.g., Tucker, Goldenberg, Davis, Copper, Winkler, & Hauth, 1991; Ananth & Vintzileos, 2006).

Given the data presented to this point on racial/ethnic discrepancies in PTB and LBS, clearly racial inequality is of great concern to this discussion because premature births and low births are a predictor of infant mortality, neurodevelopmental outcomes, respiratory, and gastrointestinal complications, and overall adverse health (Braveman, 2014; Goldenberg, Culhane, Iams, & Romero, 2008; Write, 2011; Rappazzo, Messer, Jagai, Gray, Grabich, & Lobdell, 2015). In addition, there are many maternal or fetal characteristics that have been

associated with preterm birth, including maternal demographic characteristics, nutritional status, pregnancy history, present pregnancy characteristics, psychological characteristics, adverse behaviors, infection, uterine contractions and cervical length, and biological and genetic markers (Goldenberg, Goepfert, & Ramsey, 2005; Goldenberg, Culhane, Iams, & Romero, 2008). Thus, the goal of this thesis is to further understand these racial/ethnic differences in PTB and LBW, as well as many other indicators previously unexamined regarding Latina women's pregnancies and births.

Race and Ethnicity

Race and ethnicity have distinct definitions; it is a misconception to assume that they have the same meaning. In her book *Intersectionality and Criminology: Disrupting and Revolutionizing Studies of Crime*, Hillary Potter (2015) defined race and ethnicity. Potter states that, "Race and ethnicity are used interchangeably; however, social scientist identify *race* as the human body, and *ethnicity* as the culture, customs, religion, language, dialect, and national identity of a group" (Potter, 2015:10). In Potters definition, race is defined as the human body, however this is not to say that race is a biological entity, another definition by Tukufu Zuberi in *Deracializing Social Social Statistics*, states that,

Race is usually defined as an individual attribute fixed at birth and is employed by researchers as a variable with potential for causing change in some other aspect of that same individual. When an individual's race can change (as in Brazil), race is not attribute but a dynamic characteristic dependent on other social circumstances. In the United States, an individual's race cannot change and thus is considered an individual attribute (Zuberi, 2000:172).

Thus, in context to the United States Potter, does not refer race as a biological entity of the

human body but rather shared social status experienced by the body, not shared individual characteristics. In continuation on race Tukufu Zuberi and Eduardo Bonilla-Silva in *Toward a Definition of White Logic and White Methods*, indicate that

Race is not about an individual's skin color. Race is about an individual's relationship to other people within the society. While racial identification may be internalized and appear to be the result of self-designation, it is in fact, a result of the merging of self-imposed choice within an externally imposed context Zuberi and Bonilla-Silva 2008:7).

Making race a social stratification, not the innate makeup of an individual. In addition, Zuberi and Bonilla-Silva point out that, "The difference of skin Color between people of African and European origin is believed to be a result of a melancortin 1 receptor (MC1R)," (Zuberi and Bonilla-Silva 2008:10). Thus, people between races do not have a large variety of genetic differences; there can be more genetic variation between two people of the same race, than two people of different recesses (Zuberi and Bonilla-Silva 2008). Although, human biological variation is real, race does not make for the organization for this variation. Furthermore, it has been common knowledge and an increasingly accepted idea amongst scholars that race is socially constructed (Potter, 2015; Zuberi, Bonilla-Silva, 2008; and Zuberi, 2000). Accordingly, if race is socially constructed, then racism can be socially deconstructed and erased from our society.

Racism

In the Unites States, there is a strong tendency among many to pretend that racism no longer exists; that racism is a thing of the past (Alexander, 2012). However, this is not the case. Racism is very much alive in the lives of every American, penetrating through the bodies of people of Color while white people acquire all the benefits. Race scholar Derald Wing Sue

(2010) breaks down the concept and definition of racism in his book *Microaggressions in Everyday Life: Race, Gender, and Sexual Orientation*. Sue defines racism as “Any attitude, action, institutional structure, or social policy that subordinates’ persons or groups because of their Color. The subordination of people of Color is manifested in inferior housing, education, employment, and health services” (Sue, 2010:7). Racism can be manifested in different ways, but the end product is always the oppression and discrimination against people of Color. Racial microaggression is a type of racism that is manifested by well-intended people in which the racism occurs below the level of awareness (Sue, 8:2010). Drawing on Sue’s (2010) and other scholars’ work, Potter explains two general forms of racism, interpersonal racism and systemic/institutional racism:

Interpersonal racism engaged in by individuals is an overt, intentional, and conscious behavior, motivated by hatred of a particular racial group, that explicitly disparages a member of a racial group, to which the actor does not belong; *systemic racism* or *institutional racism* occurs at a macrostructural level, where practices procedures, policies, and law that operate within the social institutions of economy, government, schools, housing, healthcare, and religion place or keep people of Color in subordinate and disadvantaged positions to Whites who are then able to maintain a position at the apex of social ordering (Potter, 2015:15).

Potter continues to argue that racial microaggression poses a greater threat to people of Color than explicit interpersonal racism, “Because microaggressions are engaged in by “well-intentioned” people... who would never consciously discriminate”, thus making it harder to fight back and shield against racism (Potter, 2015:15). As indicated by Sue, race experts speculate that, “Racism has become invisible, subtle, and more indirect, operating below the level of

conscious awareness, and continuing to oppress in unseen ways” (Sue 8:2010). I argue that microaggression racism can be seen as it unfolds and pierces the bodies of pregnant women of Color and their fetuses and infants. The stress and overwhelming misfortune placed on women of Color and their infants subject them to health problems and inferior health care, such as prematurity (Matthew, 2015). However, it is likely that this is not experienced the same across varying groups of women of Color (i.e., Latina, Black, Native American, Asian American, and white).

Racism can be manifested into many different ways, and as a result penetrates people’s lives in a wide range of manners. One evident way that racism controls, destroys, and manipulates people is through classism. Classism is an extension of racism, where racism works through classism to oppress and discriminate against people of Color. It even goes beyond, where people of Color are suffering from great health issues and even death due to health care disparities, where “Black and Brown patients consistently receive inferior medical treatment” as compared to white patients (Matthew, 2015:5). It becomes nearly impossible for people of Color to break through the social barriers that are placed to keep people of Color at the bottom of the social hierarchy. Socioeconomically disadvantaged people of Color have been shamed and blamed for their social disadvantages; Michelle Alexander (2012) describes this phenomenon in her book *The New Jim Crow*, where she states:

We avoid talking about class. Conversations about class are resisted in part because there is a tendency to imagine that one’s class reflects upon one’s character. What is key to America’s understanding of class is the persistent belief-despite all evidence to the contrary that anyone, with the proper discipline and drive, can move from a lower class to a higher class (Alexander, 13:2012).

As a result, the oppression becomes internalized and the drive to fight and move forward become strained where a large percent of African Americans (and people of Color) are not free to move up the social status at all (Alexander, 2012). More specifically, laws and society can deter the advancement of racial equality, and the major institutions with which people of Color come in contact with are in some cases actually designed to prevent their upward mobility (Alexander, 2012).

This oppression and systemic racism can be seen amongst Latina immigrants and can be analyzed through the *Latin@ Paradox*. Immigrant women born in Latin America with a high prevalence of risk factors nevertheless have a prenatal advantage, despite facing disproportionately higher disadvantages in the U.S., this is defined as the Latin@ Paradox by Alyshia Galvez (2011) in her book *Patient citizens, immigrant mothers: Mexican women, public prenatal care, and the birth weight paradox*. (This will be further discussed this in the next chapter).

Women of Color are not only subjected to racism but also to sexism. Sexism functions in a very similar way as racism, which in this case men benefit from sexism. Where power, agency, and privilege is taken away from women in order for men to have more power, agency, and privilege. The struggle against sexism has become widely acknowledged and mostly women have fought against blunt sexism and legal policies have been set in place to protect women from sexism. However, like racism, sexism has manifested itself in different ways, but still have the same negative impact. Sue explains this phenomenon,

As our society has become more aware of what constitutes sexism and its harmful impact on women, the conscious, intentional, and deliberate forms of gender bias have seemingly decreased, but also continue in the form of subtle and unintentional

expression. These subtle forms of sexism are similar to aversive racism in that they come from well-intentioned men who believe in gender equality and would never deliberately discriminate against women. Yet, they unknowingly engage in behaviors that place women at a disadvantage, infantilize or stereotype them, and treat them in such a manner as to deny them equal access and opportunity (Sue, 2010:11).

Intersectionality

Kimberle Crenshaw, a Black feminist coined the term Intersectionality, and this term is deeply rooted in Black feminism and women of Color feminism (Potter 2015). Intersectionality is usually used as collective, broad term to label the idea of interlaced identities of women of Color (and others), however, its true significance is to expand the vocabulary to describe the experiences of women of Color, based in multiple interlocked and subjugated identities (Potter, 2015:66). Potter uses terms Intersectionality and intersectional to mean the same thing referring to, “the concept or conceptualization that each person has an assortment of coalesced socially constructed identities that are ordered into an inequitable social stratum” (Potter, 2015:3). The study of Intersectionality can provide a deeper analysis of the oppression that women of Color are forced to endure.

Theoretical Approach

As the famous intellectual Michel Foucault once said, “knowledge is power and power is knowledge” (as cited by Fillingham, 1993:5-7). But what is knowledge? Knowledge is used as a form of truth, which begs the question is there absolute knowledge? Foucault proposes the doubt of any knowledge of absolute truth, therefore, without absolute truth, what does knowledge mean? According to Foucault, “maybe knowledge would be just what a group of people get together and decide what is true” (as cited by Fillingham, 1993:6). Therefore, the people who

create knowledge obtain the power, and thus people with power are able to create knowledge. For this reason, knowledge equals power, and power equals knowledge.

People with power decide what is true, what is not true, and those who dictate knowledge in the United States have historically been the wealthy, white elite, and primarily wealthy, white men (e.g., Alexander, 2010). White people have used knowledge as a method of racism to up lift and retain white supremacy. For example, this has been done by omitting and excluding the reality and history of people of Color in the United States (Perez, 1999). Foucault also talks about how power and knowledge are able to define the normal by defining the abnormal, “The study of abnormality is one of the main ways that power relations are established. When an abnormality and its corresponding norm are defined, somehow it is always the normal person who has power over the abnormal” (as cited by Fillingham, 1993:18). Therefore, in order to define whiteness, which is too often viewed as the “normal,” we first need to define the “abnormal” which in this case would be people of Color, where the “normal” whiteness has power over the “abnormal” people of Color. Hence, white people have implemented colonial knowledge as the truth. However, knowledge is transformative and ever evolving, thus it has the ability to change and acknowledge the truths and experiences that have been consciously expulsed from history by white people, as well the negative stereotypes that hunt and deteriorate people’s lives.

On a more positive note, if knowledge is transformed and can be changed, then power can also be transformed and changed. In order to transform and change the dynamics of knowledge and power we can implement the decolonial imaginary. As Emma Perez suggests in her book *The Decolonial Imaginary: Writing Chicanas into History*, “through the decolonial imaginary, the silent gain their agency” by exposing new and stolen knowledge to gain back

power (Perez, 1999:33). It is very detrimental to only learn about Eurocentric colonial white men and their great success stories, because it creates a notion and a bias truth that only white people and specifically white men can have an impact on the world, create meaningful history, and obtain positions of power. Such an important part of American history was absent, excluding Chican@s² and rejecting our importance and significance in the United States. As Emma Perez states “the colonial mindset establishes the naming [and telling] of things, which is already going to leave something unsaid, and leave silences and gaps that must be uncovered” (Perez, 2010:10). By silencing and not acknowledging the history and the knowledge, they are taking away power, leaving people of Color hopeless and at their mercy. By not learning about the history of people of Color, Brown and Black folk may feel alone and confused. Not knowing that there are people like them in the present and in the past, that resample their culture, beliefs, and identity; leaves them struggling to find a sense of belonging and corrupts their identity. It is important to give all people the opportunity and resources to understand that they belong, deserved an education, adequate health care, a better life and that nobody has the right to tell them what they can or cannot do something because of the Color of their skin.

If all people of Color had the opportunity and resources to obtain a higher education, then they can all learn to understand the racist world that we live in and learned how to understand ones’ self with all their different intersectionalities and identities. But most importantly learn how to identify racism and discrimination against them be able to analyze racism and sexism as well all the other isms, and try to figure out why they are being subjected to oppression, and how to rebut it and fight against it.

² I use @ for Chican@ and Latin@ to be gender neutral. However, the Latinx diaspora is a better language to use, because it includes all genders and sexualities. Whereas @ is restrictive to the binary of female and male, however my data unfortunately is restrictive to women and men, therefore I use @.

For instance, Perez states that Chican@ history is seen as hazardous to the Brown population (Perez, 2010). Chican@ history that has been recovered had been proven a threat to the colonial, because it is a reminder and verification that the colonizers are the real aliens to this land and their knowledge and power is based on lies and manipulations. The colonizer reacts against scholars of Color and people of Color in general by ignoring, diminishing, and silencing them, as Foucault states, “what [the abnormal] have to say has already been ruled irrelevant, because by definition they have no knowledge”, this is code for not wanting us to have any power (as cited by Fillingham, 1993). Thus, white people- the colonial do not want Brown and Black folk in institution of higher education. Where they will gain the knowledge that will be and has been transformed into power. Nevertheless, the struggle does not end at obtaining a higher education, there are still many ways in which the colonial tries to retaliate by trying to dictate knowledge and remove power from people of Color. This is done by the Neoliberal agenda. Lisa Duggan explains neoliberalism in her book *The Twilight of Equality? Neoliberalism, Cultural politics, and the attack on democracy*. Duggan defines neoliberalism as “... a vision of competition, inequality, market “discipline”, public austerity, and “law and order” (Duggan, 2003:x).

Neoliberalism thrives on exploiting and controlling markers of difference such as, race, gender, sexuality, religion, ethnicity, and nationality. By doing this upward distribution of wealth and power is easier and more manageable. As a result those exploited are left without power, resource, and thus the ability to make changes. Also, neoliberalism aims to fully control institutions in order to prevent challenges and oppositions against neoliberalism thus the colonial. Duggan gives the example of the SUNY New Paltz Women’s Studies Program Conference that was attacked for “Abandoning all scholarly pretense by bringing in sex trade

entrepreneurs and propagandists to offer training in the huff-and-puff of lesbian sadomasochism and the use of sex toys” (Duggan, 2003:26). The conference was used as an excuse to discredit and try to shut down public institutions of higher education to privatize them, while arguing that tax dollars were being miss used and that the money ended up the pockets of sexual perverts (Duggan, 2003). These kind of attacks on public higher education in New Your and in the United States are used to aim at the goal of privatizing education as Duggan explains, “by reducing the overall proportion of public funds supporting higher education and by redesigning college and university curricula to more directly serve private business needs” (Duggan, 2003:41-42). Neoliberalism efforts to reduce public education are an aim to eliminate large access to knowledge and information to define education as a matter of “personal responsibility” (Duggan, 2003). This is an effort to limit education to the general population to continue the oppression and repression in order for neoliberalism exploitation to continue and eliminate new forms of knowledge and power.

Both Duggan and Perez argue that in order to ensure the downfall of neoliberalism and thus the colonial multicultural groups must be united and implement decolonial knowledge, “only an interconnected, analytically diverse, cross-fertilizing and expansive left can seize this moment to lead us elsewhere, to newly imagined possibilities for equality in the twenty first century” (Duggan, 2003:xxii). The cross-fertilization of groups would ensure a large array of knowledge, ideas, and needs being examined that would be more representative of the population and thus society. This would eliminate the one percent controlling all the resources, defining and creating knowledge and possessing the power. The redistribution of wealth and power would be more equally distributed, people of Color would be able to gain back and create new knowledge,

as exploitation and oppression would be banished because cross-fertilization and the decolonial imaginary would aim to empower all people.

One of the biggest and most powerful characteristics that the founding fathers of this “great nation” (the U.S.) imposed and engraved into our culture, lives, bodies, and every single part of our society is racism. Indeed, racism is the foundation of this “great nation.” Hence, by omitting the history of the people of Color, our knowledge and our power were and are taken away, leaving people of Color alienated, isolated, and seen as the abnormal. However, as Perez describes, “we can decolonize the mind, the spirit, the body, the geographic, cultural, and socioeconomic terrain we all live with and inside of” (Perez, 2010:66). The United States will one day take people of Color seriously when the colonizer finally understands that people of Color will expose the truths that were silenced and hidden, generate a new knowledge and thus gain power and control to make a change that benefits all people. Therefore, it is very important to fight back against racism and the colonial, by breaking the system to educate our people using the decolonial imaginary and coming together as a whole.

Conclusions

Racism, in particular, in the medical field is far less studied than in other institutions, such as the criminal legal system (CLS) (see, for example, Alexander, 2012; Belknap, 2015; Potter, 2015; Stevenson, 2014), and the educational system (for a review see Belknap, 2015). This is not to state that the extant research in racism in the CLS and education is all excellent or sufficient, but stress the relative sparsity of research on racism in the medical field. Certainly, Dayna Matthew’s (2015) proposition to end racism in the health field is a welcome and needed step in the goal to provide adequate health care and equality for people of Color.

In this first chapter I have identified and defined significant concept and theories sending my research question: How is race/ethnicity related to Natality Data on mothers and babies in the U.S.? To date this research, when talking about racial differences in premature and low birth weight outcomes, sources almost exclusively focus a binary--- as if mothers are only Black or white (e.g., Braveman, Heck, Egerter, Marchi, Dominguez, Cubbin, & Curtis, 2014; Rappazzo, Messer, Jagai, Gray, Grabich, & Lobdell, 2015).

Existing research has largely ignored Latina, Asian American/Pacific Islander, and Native American/Alaskan Native women, although there are exceptions including mostly Latina and Asian women (e.g., Mason, Kaufman, Daniels, Emch, Hogan, & Savitz, 2011; Dunlop, Salihi, Freymann, Smith, & Brann, 2010; Fulda, Kurian, Balyakina, & Moerbe, 2014).

The next chapter is a review of the literature on race/ethnicity in comparisons of pregnancy, births, and newborns. Chapter 3 describes the *2006 Natality Detail* data collected on all mothers giving birth to live babies in 2006 in the U.S, and data on their pregnancies and their babies. (The *2006 Natality Detail File* does *not* collect data on women with stillborn babies.) In Chapter 4 I present the findings from my analysis of the *2006 Natality Detail* data. My thesis is among the first or the first time these data have been analyzed beyond the governmental reports on them. My thesis is also the first time that any year of the *Natality Detail File* data provide such a nuanced racial/ethnic comparison of the mothers, pregnancies, labor, and newborns. More specifically, in this thesis I compare pregnancy, labor, and live-birth babies across the mothers' race/ethnicity using 5 racial/ethnic categories: Latina, Black, Native American/Alaskan Native (NA/AN), Asian American/Pacific Islander (AA/PI), and white. Chapter 5 is a summary of my thesis findings, the policy implications of my findings, and suggestions for future research.

CHAPTER II: A REVIEW OF THE LITERATURE

Introduction

Chapter 1 introduced this thesis on how a mothers' race/ethnicity is related to their demographic, pregnancy, and labor/delivery characteristics, and the characteristics of their newborns. The first chapter included definitions of some of the key concepts and the theoretical approach. This chapter is a review of the existing research on this topic of race/ethnicity and pregnancy, births, and babies. Also, Appendix A of this thesis includes the definitions of the key medical terms (and the sources for these terms) used in the *2006 Natality Detail File* data used for this thesis.

Premature Birth (PTB)

Overwhelmingly, the literature shows discrepancies in preterm births (PTBs) across the mothers' race/ethnicity. Many studies indicate a strong consistency whereby Black mothers have the greatest risk for premature births, as compared to any other racial/ethnic group. Latina women mostly show higher rates of prematurity than white women, but much lower rates (of PTBs) than Black women. Massett, Greenup, Ryan, Staples, Green, and Maibach (2003) stress that although premature births are common for all women, the rates vary depending on the mothers' race/ethnicity, yet the reasons for these divergences are largely unknown. Their study is based on a national survey of the general population regarding people's knowledge, attitudes, and beliefs about preterm births and was compared data on PTB. They oversampled Black and Latina women, and ended with a sample of 1967 Americans. The study stated that Black women have a much higher rate of premature births compared to white women, while Latina women have an intermediate risk. The high prematurity rate of Black women was seen even after for

controlling the variable for education and income, and the reasons for these disparities are unclear (Masset, Greenup, Ryan, Staples, Green, and Maibach 2003). Massett et al. continues to state that in half of the preterm births the etiology is unknown, but recent studies suggest that infections, placental, uterine, and cervical abnormalities; tobacco use, and psychosocial factors, such as severe stress, anxiety, and depression may be associated with increased rates of preterm birth.

In relation to the survey the majority of the Black women surveyed, were more likely to believe that the high prematurity rates in the Black community were due to limited availability of prenatal care and women's health care overall. Particularly, McGovern (2007) confirms that many Black women indeed receive inadequate reproductive health care. Premature births are less of a concern within the white population since the premature rate is lower in comparison to Latina and Black women. In addition, white women believed that premature births were less common and serious than Black and Latina women (Masset et al, 2003). The study highlights how prematurity is a more serious and reoccurring health concern amongst Black and Latina, than white, women.

With similar findings, Goldenberg, Culhane, Iams, and Romero (2008) state that Black women consistently reported to be at higher risk of preterm delivery: preterm birth rates are in the range of 16–18% in Black women compared with 5–9% for white women. Over time, the disparity in preterm birth rates between Black and white women has remained largely unchanged and unexplained, and contributes to a cycle of reproductive disadvantage with extensive social and medical consequences (Collins & Hawkes, 1997). Notably, the literature on racial/ethnic comparisons of pregnancy, birth, delivery and newborns largely excludes Latina, Asian, and Native American women. An exception is a study by Goldenberg, Culhane, Iams, and Romero

(2008) who found that Asian American and Latina women typically have lower preterm birth rates than Black women.

Conversely, Afable-Munsuz, and Braveman's (2008) report that preterm births should not be generalized across racial/ethnic groups--- at least among certain racial/ethnic groups--- due to variations across groups in social experiences. Unfortunately, they did not identify the race/ethnic groups and did not elaborate on the differences in social experience. Although these studies went into greater depth about health and medical conditions that could explain prematurity, there is a failure to focus on trying to explain the reasons for the racial/ethnic premature disparities, particularly as an impact of racism.

Low Birth Weight (LBW)

The findings on race/ethnicity and low birth weight (LBW) are very similar to those of premature births (PTBs). More specifically, the trend is that Black women have higher rates of LBW as compared to Latina and white women. Goldenberg, Culhane, Iams, and Romero (2008) explain that Asian American women have high rates of low birth weight due to decreased fetal growth, but their premature birth rates are low. This provides an important gauge for understanding racial/ethnic LBW and PTB research that is likely unique to Asian American mothers.

Fulda, Kurian, Balyakina, and Moerbe's (2008) natality research found that low birth weight increases for babies of white and Latina women when a Black man is the father of their babies. As cited by the study, 8% of babies born to a Latina mothers and a Black father's were LBW as compared to 6% of babies born to both parents being from Latina America origin (Fulda, Kurian, Balyakina, & Moerbe, 2008). However, if a white mother was giving birth to a baby fathered by a Latino man, the outcomes did not differ as to both parents being white. The

study suggests that paternal race/ethnicity is an important predictor of LBW among Latina and white women (Fulda, Kurian, Balyakina, & Moerbe, 2008).

Socioeconomic Status

Overall, most of the literature states that socioeconomic status might be a better predictor of premature birth and low birth weight rather than race/ethnicity. However, the fact that socioeconomic status is closely related to race/ethnicity in the United States cannot be ignored or dismissed (e.g., Alexander, 2010; Potter, 2015). Indeed, McGovern (2007) states that there is a health care crisis in the United States, particularly among low-income women and women of Color, who are paying the price. Women with preterm births are more likely to be Black, unmarried, and have attained lower educational status than women with term births (McGovern, 2007). McGovern also argues that reproductive health such as pregnancy care is inadequate amongst Black and Latina women, far worse than the reproductive care to which white women have access (McGovern, 2007). In addition, according to Braveman, Heck, Egerter, Marchi, Dominguez, Cubbin, and Curtis (2015), stress derived from racial discrimination experienced by the mother can operate independently of or in concert with socioeconomic effects on health, including premature births. Thus, premature births and low birth weight have been associated with low unemployment, income level, poor housing, and racial isolation (Rappazzo, Messer, Jagai, Gray, Grabich, & Lobdell, 2015).

In sum, the findings summarized indicate significant intersections among race/ethnicity and socioeconomic status when addressing PBT and LBW. Both race and class, or stated alternatively, racism and sexism, intersect to result in grave effects on LBW and PTB rates primarily among babies of poor mothers of Color.

Latin@ Paradox

Premature and low birth (PTB and LBW) babies are a concern in our current health care system due to their long-term complications. There are many risk factors associated with low birth weight and prematurity. As mentioned by Galvez (2011:4), some of the maternal factors that may contribute to prematurity and low birth weight include:

Low income, low levels of education, late or no prenatal care, being a teen mother or of advanced maternal age, being an unmarried mother, parity (or birth order, first-borns are at greater risk), insufficient spacing between births, lack of access to health insurance, alcohol consumption, smoking and drug abuse, and being employed, as well as physical factors like slight maternal stature, inadequate maternal weight gain, and low maternal weight before.

However, the exact cause of prematurity and low birth weight is unknown in most cases, thus requiring further research.

Ruiz's (2012) work is relevant for understanding the Latin@ Paradox and pregnancy and births. As applied to the pregnancy and birth research, the "paradox" part of the Latin@ Paradox is that compared to white women's newborns, Latina immigrant women's newborns have about the same or even lower premature and low birth weight rates, regardless of barriers such as poverty, unemployment, lack of health care, language barriers, acculturation, discrimination, undocumented legal status, and so on, as stated by Ruiz (2012).

So why do Latina immigrant women have a prenatal advantage regardless of the significant racial and class adversity they face? The current literature states that Latin@ culture can be a protective mechanism against premature births and low birth weight. Shaw, Kate, and Pickett (2013), for example, suggests that pregnant women living in Latin@ communities have a

strong support system because of concepts of motherhood and family, which are very important in the Latin@ culture. Ruiz (2012) highlighted that the Latin@ cultures empathize relationships, interdependence, collaboration, and respect, whereby pregnant women can embrace and take care of themselves and their growing fetuses more fully knowing they have a significant social support system. These are some of the possible explanations that literature gives to support the Latin@ Paradox in terms of pregnancy and babies.

The data shows that new Latina immigrants have lower premature and low birth weight rates as compared to second-generation Latina immigrants. As mentioned by Galvez (2011), in comparison to nonimmigrant women in the U.S, Latin American immigrant women have fewer complications during a low birth weight because Latina women had a healthier diet, more exercise due to daily endowers, and followed ideas about pregnancy and childbearing that they gathered from their hometowns and from their mothers and grandmothers. Also, according to Shaw, Kate, and Picket (2013) the benefits for women may result not only from the adoption of positive aspects of Latin@ culture, but also from the rejection of negative aspects of the broader U.S. culture, such as smoking and drinking during pregnancy.

According to Galvez (2011), another contributor to the Latin@ Paradox is that Latin American immigrant women have not yet experienced the deadly subjugation of racism. Thus, Latina immigrants have not yet internalized the stigma correlated with being a woman of Color in the United States. However, once Latina immigrants live longer in the U.S., the risk for low birth weight or a premature birth may increase substantially. It also becomes more likely that she will experience a more difficult pregnancy and birth with a greater risk of complications and bad outcomes. Therefore, the Latin@ Paradox highlights that premature and low birth weight epidemiology is a problem concerning mostly among Latinas in the United States.

Racism in the Health Field

It is popular to blame the poor for their substandard health by pointing to risky health behaviors. But, according to Matthew (2015), this does not take into account the unequal exposure to the stress of discrimination, inequitable access to healthy food and built environments, and inferior access to resources. These are generally associated with many racial and ethnic differences in health behavior. Thus, blaming the victim even though it is unmistakable that the oppression and discrimination placed on bodies of Color affect their health and well-being. This creates a cycle that is detrimental and nearly impossible to overcome and to obtain the necessary resources and attention to medical care and healthy living.

Matthew's (2015) states that the United States is running two separate and unequal medical systems one for whites and another one for people of Color. Further identifying *unconscious racism* as when people of Color receive poorer health services due to negative stereotypes associated with their race or ethnicity. Furthermore, she argues that this has become the social norm. "A bias is a negative attitude held about one group of people relative to another group of people. However, a distinguishing feature of an *implicit* bias is that negative association operates unintentionally or unconsciously" (2015:39). Matthew (2015:41) goes on to report: "Research confirms that most Americans hold implicit anti-Black and pro-white biases."

Matthew (2015:71) provides a hypothetical example of how a physician's unconscious racism to a person of Color further leaves that person to "Suffer the most harmful and insidious form of discrimination." The example goes as follows. Mr. Thompson is a 50-year old African American man with a history of well-controlled hypertension and smoking, but no other risk factors for coronary artery disease (CAD), he goes to the emergency room complaining of chest pain, and some treatments are administered but not thrombolysis. Mr. Thompson did not receive

adequate medical care, including the administration of thrombolysis, and if a person is African American (like Mr. Thompson), Asian, Latin@, or Native American, they are less likely to receive thrombolysis, a well-known drug that breakdowns blood clots causing the chest pain, as compared to white patients (Matthew 2015). Mr. Thompson did not receive the adequate health care he deserved at the emergency room, and as a result the risk factors for coronary artery disease can increase and worsen his health. Mr. Thompson is left with little to no options as if he turns to his primary provider, “he is less than likely than a white patient to receive educational counseling about smoking cessation, moderating his diet, and increasing exercise, because his providers are likely to assume that person is not well-educated enough, wealthy enough, or motivated enough to benefit from this time of life-prolonging counsel” (Matthew, 2015:155). Thus leaving a person like Mr. Thompson vulnerable and at higher risk for server disease and consequently death. This is a an example of how a health care “provider’s” unconscious racism accounts for 80,000 to 84,000 deaths of people of Color annually in the U.S.

To attack this problem there needs to be a strategic intervention to alter implicit (racist) biases, to reduce unconscious racism. To do this, Matthew proposes to change the current informational inputs, so that the resulting stereotypes patterns no longer conform to traditional, discriminatory, or inequitable stereotypes, but instead lead individuals and institutions to more equitable judgments and more equitable conduct (Matthew 2015). Consequently, changing how we perceive people of Color as a whole, the way they are depicted in the media, history and also teach history of people other than white (which leads to the decolonial imaginary by Emma Perez), and change how we treat each other and embrace differences rather than criticize and fear difference. Also, it is important to distinguish between equality and equity. This is because when civil rights and justice calls for equality amongst races and ethnicities-and beyond, it does not

mean that we need the exact same things as the privileged majority, but rather evenness, justice, and fairness, because equality does not accommodate for difference and diversity. Therefore, equity can provide the same law, justice, and education, opportunity to wealth, resources and positions of power, and health care for all people taking into account culture, religion, race/ethnicity, gender, sexuality and not only focusing on Eurocentric needs and wants. In addition, we need more people of color and women in the health field, which will defiantly decrease unconscious racism thus far.

Conclusions

In conclusion, premature births and low birth weight in relation to race/ethnicity is a significant problem in the United States. It is devastatingly visible that women of Color and their babies, especially Black women and their babies, endure the consequences of racism, which are negatively affecting their health and the health and wellbeing of their fetuses and babies. Although, the research does not prove that racism is the cause of the discrepancies between race/ethnicity and prematurity and Low birth weight, it is reasonable to posit that racism has an insidious impact on pregnant women of Colors and their babies. Racism can maneuver into people's lives in many different ways, including microaggressions and systemic racism. Hence, research should explore more racism-related stress and actions affecting women's pregnancies, fetuses, deliveries and babies (Braveman, Heck, Egerter, Marchi, Dominguez, Cubbin, & Curtis, 2014). The purpose of the remainder of this thesis is to use the *2006 Natality Detail* data to examine pregnancies, births, and babies across five racial ethnic groups: Latina, Black/African American, Native American/Alaskan Native, Asian American, and white women.

CHAPTER III: METHODS

Introduction

The previous two chapters traced the existing literature on racial/ethnic comparisons of pregnant women's demographic, pregnancy, delivery and babies' characteristics. I located the United States *2006 Natality Detail File* as the most appropriate data to study the racial/ethnic comparisons of pregnant women, their medical care and experiences, and their babies in the U.S. The *2006 Natality Detail File* was acquired from the ICPSR- Inter-University Consortium for Political and Social Research (24941). I had originally planned to use the 2001 data from this same source, but when I was ready to start data analysis, this newest file had just been released (January 2016). The *2006 Natality Detail File* is an improvement from the *2001 Natality Detail File* in that far more data were collected from more sources. Also, given the very recent release of these data, there are no publications on it. Although it is possible others are analyzing it at the same time I have been for this thesis, I am definitely among the first to analyze these data.

Although this is a significant advantage for my thesis project, this did not come without a cost. There were many problems in accessing the data and getting the data to be analyzable. For example, the downloading of this data set was not what was described on the ICPSR website and the ICPSR staff were difficult to access, thus I had a difficulties downloading the data to be analyzable. Fortunately, Dr. Jani S. Little, Director of Computing and Research Services for the Institute of Behavioral Science at the University of Colorado-Boulder was willing and able to download the data set for me in a manner that I could then begin analysis. However, as I worked with the data, I found that many of the variables needed additional work to prepare for even the most basic frequency analyses (e.g., the missing data were not coded as missing). In sum,

although this new and large data set was ideal for my thesis research, and I am very fortunate to be among the first (if not the first) to analyze it, this “newness” also provided significant and time-consuming hurdles.

I analyze the data through an Ethnic Studies lens, where I compare women’s pregnancies and birth outcomes primarily based on race/ethnicity. As stated in the previous chapters, the vast majority of the existing research on racial/ethnic comparisons of pregnancy and newborns, focuses solely on the binary of Black (African American) and white mothers, largely excluding Latina women, as well as excluding Asian American/Pacific Islander (AA/PI) and Native American/Alaskan Native (NA/AN) women. Therefore, in addition to using a very recently released huge data set, my thesis also goes beyond the pregnancy and birth racial/ethnic comparisons largely limited to a Black-white binary, by also including information on Latina, AA/PI, and NA/AN women and their babies. That is, in this thesis I provide the analysis of these three race/ethnic groups that have been largely omitted from research (Latina, NA/AN, and AA/PI). I break down the data into 5 race/ethnic categories, Latina, non-Latina Black, non-Latina Asian American/Pacific Islander, non-Latina Native American/Alaskan Native, and non-Latina white. The break down highlights the difference between ethnicity and race, as Latina women are considered white in terms of race. However, I am interested in Latina women independently of white women, therefore the distinguishing factor.

Hypothesis

Due to the literature on the Latin@ Paradox where Latina women and their babies have advantageous health outcomes aside from high adversity and low resources. Thus, I could hypothesis that infants born to Latina mothers will have health markers (PTB and LBW) that are similar to or even better than those of white mothers despite adversity.

Data Collection

ICPSR- Inter-University Consortium for Political and Social Research (24941)

2006 Natality Detail File [United States]: User Guide explains the data collection.

The data was collected from U.S. Standard Certificates of Live Births in 2006. It is estimated that more than 99 percent of all births occurring in the United States in 2006 were registered (36). The birth certificates were obtained from The U.S. Standard Certificate of Live Birth, issued by the U.S. Department of Health and Human Services, and they are received every ten-fifteen years (10). In 2003 the U.S. Standard Certificates of Live Births was revised, and replaced the 1989 U.S. Standard Certificates of Live Births. The revised U.S. Standard Certificates of Live Births includes a “Mother’s Worksheet” and the “Facility Worksheet. In the Mothers worksheet, data are directly obtained from the mother and include items such as race, Latin American Origin, and educational attainment. The facility worksheet includes data directly obtained from the medical records of the mother and infant for items such as date of last menses, pregnancy risk factors, and method of delivery (11). However, many items remained unchanged (e.g. maternal age, birth order, marital status, attendant at birth, birth weight, gestational age). These are only a few of the changes or similarities. In addition, estimations of age, sex, race and Latina/o origin-Populations for birth and fertility rates for 2006 shown on the report: “Births: Final Data for 2006” are estimated from the 2000 census, as of July 1, 2006 (37).

Sample

The data includes about 4.3 million registered births in the U.S. in 2006. In this study the sample is the population of live births in 2006. However, due to missing data, my sample includes 4,273,225 births. Martin, Hamilton, Sutton, Ventura, Menacker, Kirmeyer, and Mathews (2009), specified the details of the data. Denominators for population-based rates are

post-census estimates derived from the U.S. 2000 census (Martin et al., 2013). The sample of live births equals the sample of mothers.

Variables

In the extant government reports on the *2006 Natality Detail File* data, race/ethnicity is distinguished between “Hispanic” and “Non-Hispanic” and then among Black and white. Thus, after gaining access to the data and with help from Dr. Little to be able to analyze it, and after fixing the missing variable coding in the data file, I created a new variable from the existing race/ethnicity variables, to be able to make comparisons across the mothers’ race/ethnicity in five single-race categories: Latina, Black, Native American/Alaskan Native (NA/AN), Asian American/Pacific Islander (AA/PI), and white.³ (I discuss the problem of single-race categories in the limitations section of this chapter.) As noted previously in this thesis, Appendix A provides definitions for the medical variables used in the *2006 Natality Detail File*, which I included in my analyses (although I do not report on every analysis I conducted, as noted in the findings). In this thesis I conduct bivariate analyses (Chi-squares and ANOVAs) to conduct racial/ethnic comparisons about the mothers’ demographic, pregnancy, birthing/delivery, and babies’ characteristics. The variables are in Tables 1 through 5 and many medical terms are described in the appendices. They include the mothers’ demographics (e.g., age, race, etc.) as well as pregnancy histories (e.g., number of previous births, medical conditions during current pregnancies, etc.) and the babies’ characteristics and health problems.

³ Oddly, in Table 1 of Martin et al.’s (2009:29) report on the 2006 statistics, they provide frequencies across Black, NA/AN, AA, PI, and white, but do not include Latina in the available data set and that is the only way they include this more comprehensive racial/ethnic breakdown of the mothers.

Data Analysis

Tables 1 through 3 are bivariate analyses of nominal and ordinal data using chi-square analyses. Tables 4 and 5 use ANOVA (analysis of variance) with a Tukey post-hoc method, to compare the means of the ratio level data for two of the key dependent variables. First, weeks in gestation (measured as a ratio variable, unlike the interval-level data used in the cross-tabulations/chi-squares), was used as a more nuanced way of looking at pre-term births (PTBs), with greater gradation across the pregnancies/babies. Second, the babies' weight in grams was used as a more nuanced way of examining low birth weight (LWB) with ANOVA.

Limitations

Although this is a truly remarkable and in many ways comprehensive data set, it is not without limitations. First, it is not reported how the race/ethnicity data were collected. That is, the reports on the data do not indicate whether mothers were able to identify their racial/ethnic identity, or if the mothers' race/ethnicity was assumed or imposed on them. Surprisingly and troubling, it seems that little recognition was given to bi- or multi-racial/ethnic individuals. More specifically, according to the codebook and data set, there are no women that belong to more than one of the five racial/ethnic groups used in the analysis (Latina, Black, AA/PI, NA/AN, and white). Clearly there are many people, including pregnant women and new mothers in the U.S. who are bi- and multi-racial/ethnic (e.g., Latina-Black, Black-Native American, Black-Latina-Native American, etc.). In the same vein, the population used to compile births by race and ethnicity was based on a special estimation procedure, and are not actual accounts that are based from the 2000 census. As a result, the estimation procedures used to develop these populations may contain some errors (39). Since the Native American and Alaskan Native populations are much smaller it is more likely to be affected than larger populations by potential measurement

error (39). The errors are unknown, but are important to keep in mind. Therefore, the race/ethnicity of mothers may not be completely accurate. Finally, the *Nativity Detail File* data only include “live births,” and to adequately address mothers’ and newborns’ health it is crucial to include births that are not “live” (e.g., stillborn births).

Regarding the analyses used for my thesis, it was beyond the scope of time and space to conduct some other analyses that would be useful (but are more appropriate for a master’s thesis or even doctoral dissertation). For example, if I had more time, I would have included the fathers’ races/ethnicities, and how these interacted with the mothers’ and newborns’ health, and so on. I also wish I had time to compare Latina mothers in particular (but also the four other race/ethnic groups of mothers) as to whether they were immigrants or visitors to the U.S. in terms of their demographics, their pregnancies and births, and their newborns, given the literature reviewed in the previous chapter. Finally, I would have also preferred to be able to do multivariate analyses for this thesis, to examine what might be spurious relationships in the bivariate analysis findings. Some initial analyses I conducted but did not have time to perfect, indicate the likely importance of controlling for variables such as the mothers’ education and the medical access to a racial/ethnic comparison of pregnant women, birthing/delivery, and newborns.

CHAPTER IV: THE FINDINGS

Introduction

The goal of this thesis is to expand on the existing research on racial/ethnic comparisons of pregnant women in the U.S. in terms of their demographic, pregnancy, birthing, and baby's characteristics. To date, little research examines this beyond a Black-white (African American v. white) comparison, where Latina identities are often conflated, as explained previously in this thesis. The previous chapter explained how I am using the *2006 Natality Detail File* data for all live births in the U.S. in 2006, whereby I created a variable to make racial/ethnic comparisons on the women's demographic, pregnancy, birthing, and their babies' characteristics. This chapter reports the findings from the *2006 Natality Detail File* data.

The Demographic and Pregnancy Characteristics of 2006 Women with Live Births

The findings from the *2006 Natality Detail File* data regarding the racial/ethnic comparison of the mothers' demographic and pregnancy data are reported in Table 1. All of the racial/ethnic comparisons were statistically significant at the $p \leq 0.0001$ level which is not surprising given that the sample was over 4 million women, and for every variable, there were a minimum of well over 2 million women for which there were data. That said, in this table we can see that although the number of live births by women under the age of 15 were 0.1% for the entire sample, this number was least common for AA/PI women (0.0%), then white women (0.1%), while both Latina and NA/AN women (0.2%) had twice the rate of the total sample than white women, and Black women (0.4%) had 4 times the rate of the total sample and white women. The next youngest group of mothers was 15 to 19 years old, and these were most likely

NA/AN (17.1%) and Black women (16.8%), followed by Latinas (14.0%), and then much more distantly by white (7.4%), and far more distantly still, by AA/PI women (2.8%).

In terms of marital status, 61.5% of the total sample were married, and this was by far the most common among AA/PI women (85.0%), followed by white women (73.4%), and then a significant gap to the next most commonly married racial/ethnic group, Latinas (50.3%), then NA/AN women (34.7%), and finally, Black women (29.3%). The point of these findings are not to make judgment on whether new mothers are married, but rather to note how this might be related to medical services they receive and whether the babies' fathers will be financially and emotionally involved in the labor/deliver and the babies lives. This will be addressed in slightly more detail in the conclusions.

The breakdown of educational attainment in Table 1 also indicates serious racial/ethnic inequality among the women in this sample. Notably, in this case, Latinas strongly and significantly dominate the lowest level of education: less than or equal to 8th grade. Almost one-in-five (18.2%) of these (Latina) mothers have this lowest level of education. Latinas are more than twice as likely as the full sample (6.9%), over 4 times as likely as NA/AN women (4.0%), about 9 times as likely as AA/PI (2.1%) and Black (2.0%) women, and 12 times as likely as white women (1.5%) to be at this lowest level of educational attainment. Notably, Latinas (33.0%), indeed one-third of Latinas, predominately report a 9th to 12th grade level of attainment (without a diploma), followed by about a quarter having a high school degree or GED (HS/GED) (23.4%), and then about one-fifth at the lowest level, as stated. Black women predominately, also one-third, report a HS/GED (33.1%) followed closely by about a quarter of Black women reporting some college/no degree (24.6%) and 9th to 12th grade without a degree (23.3%). NA/AN women most predominantly fall into the HS/GED category (30.9%), then the 9th to 12th

grade without a degree 28.8%), and then some college/no degree (23.4%). AA/PI women are most frequently, again one-third, in the bachelor's degree category (33.3%), with about 14% in each of the following categories: master's degree, some college/no degree, HS/GED. White women, one-quarter, predominantly fall into the HS/GED (24.5%) followed closely by bachelor's degree (22.2%) and some college/no degree (21.4%). Again, these findings indicate huge racial/ethnic differences in mothers' educational attainment.

Mother's weight gain during pregnancy is an important indicator of the fetus health, as stated by Rasmussen and Yaktine (2009); the normal weight gain is between 25 and 35 pounds. Black (18.8%) and NA/AN women (17.2%) had the highest percent in the "least weigh gained" (less than 16 pounds) category, followed by Latina women (15.7%), with white (10.9%) and AA/PI (10.0%) women least represented in this lowest category. AA/PI (20.0%) women had the highest percentage in normal weight gain (26-30 pounds), trailed by Latina (17.1%) and white (16.8%) women, and Black (15.1%) and NA/AN (14.9%) women had the lowest representation in this "normal" weight gain category. In contrast, white women (15.0%) had the highest weight gain (over 45 pounds), which is also very unhealthy (Rasmussen & Yaktine 2009), followed by NA/AN women (14.2%), Black women (13.5), Latinas (10.2%), and finally AA/PI (8.4%) women in this highest category of weight gain. All these categories were statistically significant, and underlining the differences in mother's weight gain based on race/ethnicity.

Table 1 also shows the mother's cigarette use. Most others mothers, about nine-tenths, did not smoke cigarettes during pregnancy. However, there is a significant difference based on the mother's race/ethnicity, showing that NA/AN women had the most prevalent use of cigarettes and AA/PI women had the least prevalent use. More specifically, 16.0% of NA/AN women and 12.1% of white women smoked during pregnancy, followed by 7.3% of Black, 2.5%

of Latina, and 1.8% off AA/PI women. Not only were white and NA/AN women the most likely to smoke at all during pregnancy, they were also the most likely to smoke at the highest levels (1-5, 6-10, 11-20, and 12 or more cigarettes per day).

Mother's alcohol consumption is also different based on the mother's race/ethnicity. Although almost all mothers (99.5%) refrained from drinking during pregnancy, there is a statistical difference. The highest prevalence was indicated in 1 drink per week. Where NA/AN (0.5%) had the highest rate, followed by white women (0.4%), then Latina and Black women who had the same percentile (0.2%), and AA/PI had the least (0.1%) in this category of one drink per week. Interestingly, Latina and AA/PI had a 0.0% for the remaining categories (2 drinks per week, 3-4 drink per week, and 5+ drink per week), where as Black women and white women had 0.1%, and NA/AN had 0.2% .0.1% and 0.2%. It is worth emphasizing that although NA/AN women reported the highest likelihood of drinking during pregnancy, and drinking the most per week (not just "if" they drank alcohol), that still only 1.0% of NA/AN women drank at all during pregnancy.

The Pregnancy and Labor/Delivery Histories of 2006 Women with Live Births

The findings from the *2006 Natality Detail File* data with a racial/ethnic comparison of the women's pregnancy and birth histories are reported in Table 2. These findings indicate that NA/AN (19.4%), Black (15.0%), and Latina (14.2%) women are most likely to have the current birth be their fourth or higher birth. The women (9.1%) who fall into this 4 or more births are closest to the sample average for this number of births (11.2%), with AA/PI reporting by far the lowest percent falling into the 4 or more births (6.2%). *In terms of the number of prenatal visits prior to the birth, Black (2.6%), Latina (2.3%), and NA/AN (2.3%) women are about 28 times or more likely to report having no prenatal visits than White (0.8%) ad AA/PI (0.7%) women.* When

looking at the trimester prenatal began, for those women who had it, a similar pattern emerges. First trimester-started prenatal care is highest among white (88.1%), followed by AA/PI (85.1%), then Latina (77.2%), Black (76.1%), and least likely among NA/AN (69.4%) women. *Very poignantly, in terms of the adequacy of prenatal care, NA/AN (34.7%) dominate the lowest designation of “inadequate,” followed by Black (29.0%) and Latina (29.4%) women, with AA/PI (17.6%) and white (14.4%) reporting the least likelihood of inadequate prenatal care.* Notably, when turning to the variable “attendant at birth,” NA/AN women (74.2%) were by far the least likely to have a medical doctor. This rate of a medical doctor attending the birth ranged from 85.9% of white women to 90.0% of AA/PI women across the other four-racial/ethnic groups. The other finding that stands out the most from this variable is that NA/AN women (18.0%) are at least 2.5 times as likely as the next closest group, white women (7.1%), to have a certified nurse midwife as the birth attendant.

One of the key variables for this thesis is preterm labor (PTB). This is best captured through the “weeks in gestation.” In Table 2 this is a dichotomous variable of whether or not the birth was under 37 weeks. For the entire sample, 12.8% of the babies were under 37 weeks gestation, and this was most extreme among Black (18.5%), then NA/AN (14.3%), Latina (12.2%), white (11.7%), and finally, AA/PI (10.9%) women. Thus, this PTB variable indicates strong and significant racial/ethnic differences among the mothers (and babies) in this large, national sample.

The rates of single, twin, triplet, and so on births, while significant in this extremely large sample, are all within a very close range across the mothers’ race/ethnicity. Latinas (97.7%) had the most “single” births and white women (96.2%) had the least “single” births. It is unknown

from this data set how many of the multiple births were a result of reproductive technology and how much were “natural.”

The next section of Table 2 addresses a racial/ethnic comparison of the mothers’ unhealthy medical conditions. Although many of these medical conditions fall under a frequency of 1.0%, these provide some important indicators, even among extremely unlikely mothers’ unhealthy medical conditions. Again, given the massive sample, most of these findings are significant. Due to space, I will not report every finding in this table but the following are noteworthy. First, NA/AN women are most likely to be anemic, have pregnancy hypertension, and have a previous infant at 4000 or more grams. Second, Black women are most likely to have chronic lung disease, genital herpes, hemoglobinopathy, chronic hypertension, an incompetent cervix, and other medical lists in addition to the ones specifically collected in the *Nativity Detail* data. AA/PI (followed by NA/AN) are most likely to have diabetes. White women are most likely to have cardiac problems. Black and NA/AN women are twice as likely as the three other racial/ethnic groups to have eclampsia. Latina, Black and NA/AN women are more likely than AA/PI and white women to have Rh sensitization.

Now turning to labor procedures, there were numerous racial/ethnic differences across the mothers. These are fairly clear from reading Table 2 on Labor Procedures; however, I will note some of them here. First, NA/AN women were 3 times more likely as the mothers of other races/ethnicities to have failed external cephalic, were most likely to have prolonged labor, had the most excessive bleeding during labor, and were the most likely to have dysfunctional labor. Yet, NA/AN women were also the least likely to have ultrasound during labor, and the least likely to have fetal distress during labor. White women were most likely to have labor induced. Black women are most likely to be on antibiotics, have fetal intolerance, and meconium. AA/PI

women are most likely to have chorioamnionitis, febrile, and placenta previa. Latina women are least likely to be given anesthesia, and to have breech births.

Finally, Table 2 includes the delivery method. Latina (72.1%) and NA/AN (72.0%) were the most likely among the racial/ethnic groups to have a vaginal birth without having had a previous Cesarean-section birth. Latina (14.7%) and NA/AN (15.0%) were the least like to have a primary Cesarean-section birth.

Babies'/Newborns' Characteristics

A racial/ethnic comparison of mothers in terms of their babies' characteristics is reported in Table 3. Not surprisingly, the rates of female and male babies were quite similar, although given the large data set, there were still significant differences, with AA/PI mothers (48.5%) least likely to have daughters, and NA/AN mothers most likely to have daughters (49.0%). Intersex is not included as a category, the reason being that intersex/ambiguous genitalia cannot be diagnosed in newborns. Now turning to birth weight, the newborns of Black mothers were at least twice as likely as the newborns of any of the other racial/ethnic groups of mothers to have babies with LBW (under 1,500 grams).

Similar to the many mothers' unhealthy medical conditions and the labor procedures in Table 2 (and discussed above), Table 3 includes a number of possible newborns' medical conditions. It was beyond the scope of this thesis to list all of the cases where there were racial/ethnic differences among these mothers' babies/newborns, but Table 3 includes many of them. Included in these findings on mothers' racial/ethnic patterns in babies' medical conditions, is that AA/PI mothers are the least likely to have babies with hyaline membrane disease. NA/AN mothers' babies are the most likely to have meconium aspiration syndrome. The babies of NA/AN and white mothers are more likely than the babies of other races/ethnicities of

mothers to have seizures. The newborns of Black mothers are the least likely to have cleft lips/palates, and the babies of Black and AA/PI mothers are the least likely to be born with a club foot. Black and white mothers are more likely than mothers of other races/ethnicities to give birth to babies with heart malfunctions. White mothers are most likely to give birth to babies with Down syndrome. AA/PI mothers' babies, followed by Latina mothers' babies, are the least likely to need assisted ventilation, which is most often used with the babies of Black, and then NA/AN mothers' babies. Black women's (8.8%) babies are the most likely to be admitted to the NICU, and Latinas' babies are the least likely to be admitted to this unit (5.0%). The babies of AA/PI mothers are the most likely to have a birth injury, and the most likely to have congenital anomalies not specified in the *2006 Natality Detail File* data instrument. NA/AN mothers are the most likely to have babies born with congenital anomalies and also with circulatory/respiratory anomalies not specified in the *2006 Natality Detail File* data instrument. Latinas' babies are the most likely to have chromosomal anomalies not listed in this data codebook.

In this section I am identifying two additional newborn medical conditions that had racial/ethnic differences among the mothers that are not reported in Table 3. Specifically, because reporting to only one decimal place was "0.0%" for all five racial/ethnic groups, yet the findings were significant, I am discussing Fetal Alcohol Syndrome and Spina Bifida briefly here. Regarding Fetal Alcohol Syndrome, NA/AN mothers (2.5⁻⁴%) were the most likely to have babies with this syndrome, followed by Black, white, Latina and then AA/PI mothers ($N = 2,270,497$, $X^2 = 54.3$, and $p \leq 0.0001$). Notably the prevalence was only 2.5⁻⁴% even among the most likely group, NA/AN mothers' babies. Conversely, Fetal Alcohol Syndrome is diagnosed later in the baby's life. Thus, these findings may be of concern as the diagnosis may be due to the negative stereotype that NA/AN have a high alcoholism prevalence amongst the population (Sue,

2010), indicating that the reporting's were a consequence of unconscious racism (e.g., Matthew, 2015). Second, Spina Bifida was most common among the babies of white mothers followed by Latina and Black mothers' babies, then NA/AN mothers' babies, and finally least likely among AA/PI mothers' babies ($N = 2,137,727$; $X^2 = 34.3$, and $p \leq 0.0001$). Notably the prevalence of Spina Bifida was only 2.0⁻⁴⁰% even among the most likely group, white mothers' babies.

Ratio-Level Data findings on Weeks in Gestation and Birth Weight in Grams by Mothers' Race/Ethnicity

Tables 4 and 5, respectively, include the ratio-level data findings on weeks in gestation and birth weight in grams by mothers' race/ethnicity. First, in Table 4 it is clear that while the range is quite slight (a mean of 38.0 to 38.6 weeks' gestation), Black women's babies are the only women whose babies were at 38.0 weeks' gestation, while the other racial/ethnic groups of mothers' babies were all at 38.6 weeks of gestation ($df = 4$; $F = 8,525.4$; $p \leq 0.0001$). The analysis of variance (ANOVA) used in this table to compare the mean weeks of gestation, also looked for specific significant relationships among mother dyads based on their race/ethnicity. These analyses indicate that the biggest differences are between Black and white women's babies (white women's babies have longer gestation), Latina and Black women's babies (Latina women's babies have longer gestation), and Black and AA/PI women's babies (AA/PI women's babies have longer gestation).

The findings in Table 5, on racial/ethnic differences in babies' birth weights in grams based on their mothers' race/ethnicity. These findings indicate that white and NA/AN mothers' babies weigh the most at birth, followed by Latinas' babies, and then AA/PI mothers' babies, and Black women's babies weigh the least ($df = 4$, $F = 23,905.0$; and $p \leq 0.0001$). The multiple comparisons of means in this ANOVA found that the differences were significant between all of the racial/ethnic dyads except for the AI/AN dyad where there was no significant difference.

Conclusion

This chapter reported on the findings from the *2006 Natality Detail File* and documented a number of findings on racial/ethnic differences across mothers' demographic histories, pregnancies, labors, and newborns. The next and final chapter will summarize this thesis and these findings and place them in the context of the existing research on this topic.

CHAPTER V: DISCUSSION AND CONCLUSION

Introduction

Women of Color have been facing oppression by race, gender, sexuality, socioeconomic class, and by other intersecting identities for more than 200 years (e.g., Potter, 2015). Race and legal scholar, Dayna Matthew (2015), documents how implicit and explicit racial bias is manifested through health conditions, with such racism in the health care system accounting for an estimated 83,570 deaths of people of Color yearly in the United States. Although Matthew (2015) does not specifically address pregnancy and birth, her work is ripe for application to assess and address comparisons of and discrepancies in health conditions and birth outcomes among pregnant women and their newborns related to race and ethnicity. Despite the potential and actual role of racial bias, it is also necessary to include the Latin@ Paradox in this discussion. More specifically, the Latin@ Paradox includes findings of how Latin@ identity and culture can serve as a *protective* health factor (e.g., Ruiz, 2012; Shaw, Kate, & Picket, 2013; Galvez, 2011). The purpose of this thesis was to study the differences in pregnancy and birth outcome health based on race/ethnicity.

Most research analyzes premature births and low birth weight as a binary of Black and white mothers, excluding Latina, Native American/Alaskan Native, and Asian American/Pacific Islander mothers (e.g., Braveman, Heck, Egerter, Marchi, Dominguez, Cubbin, & Curtis, 2014; Rappazzo, Messer, Jagai, Gray, Grabich, & Lobdell, 2015).

Similarly, much of the existing research on this topic fails to make important distinctions among Latinas, often grouping them with white women (e.g., Mason, Kaufman, Daniels, Emch,

Hogan, & Savitz, 2011; Dunlop, Salihu, Freymann, Smith, & Brann, 2010; Fulda, Kurian, Balyakina, & Moerbe, 2014).

In contrast, using the most recently available and most comprehensive mother and newborn data for the U.S., the *2006 Natality Detail File*, my thesis research included all of these racial/ethnic groups, under the belief that it is important to understand the health trends affecting all women and their newborns, not only Black and white women and their babies. The 2006 Natality Detail data are ideal in many ways, including that (1) it was possible to generate a variable from their existing variables to have this five-category of mothers' races/ethnicities; (2) the data include *all live births in the U.S.*; (3) the data include very detailed health information on the mothers and newborns; and (4) the 2006 data were released in January so have not been analyzed other than the government reports that were issued with them. Although I expected to find troubling findings indicating racial oppression and bias (e.g., Matthew, 2015), I was also interested in determining whether there appeared to be any protective factor for Latina mothers and their babies, which would be consistent with the Latin@ Paradox (e.g., Mcglade, Saha, & Dahlstrom, 2004; Brown, Chireau, Jallah, & Howard, 2007; Hoggatt, Flores, Solorio, Wilhelm, & Ritz, 2011).

Findings

The findings using the *2006 Natality Detail File* that are reported in Chapter 4 and Tables 1 through 5 indicate some deeply troubling raced patterns regarding pregnancy and newborns in the U.S. At the same time, I found evidence consistent with the Latin@ Paradox that Latina mothers and their babies had some of the healthiest medical states. In this section, I will discuss some of these findings.

Troubling Findings Indicating Racist Oppression

This subsection highlights some of the troubling findings indicating structural racial/racist barriers (many associated with class), as well as some findings that could be construed to be consistent with Matthew's (2015) assessment of a healthcare field fraught with racial/racist bias. First, although births under the age of 15 are very rare in the U.S., Black mothers are 4 times more likely than white mothers, and Latina and NA/AN mothers were twice as likely as white mothers to be in this category (see Table 1). (AA/PI were less likely than white mothers to be in this category). The next youngest age grouping of mothers, 15-19 years old, was disproportionately NA/AN and Black women/girls (17%), followed by Latinas (14%), white (7%), and, finally, AA/PI (3%) women.

Second, the marital status of the mothers was very racially structured, with AA/PI women (85%) being most likely to be married, followed by white (73%), Latina (50%), NA/AN (35%), and Black (29%) women (see Table 1). I am not arguing for marriage or assuming that all marriages are healthy and emotionally and/or financially supportive for pregnant women/new mothers. However, I and my data cannot answer this, it does seem likely that some of the women in this study had less access to sharing childcare and financial and emotional support.

Third, the women's educational attainment findings suggest profound racial/ethnic differences, and this is most pronounced for Latina, followed by NA/AN, and Black mothers (see Table 1). More specifically, over half (51%) of Latina mothers, 33% of NA/AN mothers, and 25% of Black mothers did not have a high school diploma or GED, compared to 12% of white and 10% of AA/PI mothers who fell into this educational attainment category.

Fourth, mothers' weight gain during pregnancy findings indicated that Black (19%), followed by NA/AN (17%) and Latina (16%) dominated the least weight gained category (less

than 16 pounds), whereas 11% and 10% of AA/PI and white women, respectively, were in this lowest weight gain category (see Table 1).

Fifth, Table 1 also reports on the mothers' cigarette and alcohol consumption while pregnant. In terms of cigarette smoking during pregnancy, although only about 10% of the women smoked at all during pregnancy, this was most prevalent among NA/AN (16%), then white (12%), Black (7%), Latina (2%) and, finally, AA/PI (2%) mothers. Similarly, although only a half of one percent of mothers reported drinking at all during pregnancy, this was most pronounced for NA/AN (0.5%), then white (0.4%), Latina and Black (both 0.2%), and finally, AA/PI (0.1%) mothers. However, these findings may not be accurate as cigarette and alcohol consumption during pregnancy was self-reported. There is a stigma connected to both reports, thus mothers could have underreported, and NA/AN mothers could have been the most honest.

Sixth, having this be their fourth or higher birth was most common among NA/AN (19%), followed by Black (15%), Latina (14%), white (9%), and AA/PI (6%) women (see Table 2). The number of children could be related to structural poverty, access to birth control and other reproductive freedom, also related to poor medical access.

Seventh, and perhaps the most profound findings in my thesis, were the acute racial disparity in the access to and quality of prenatal visits (see Table 2). *Black (2.6%), Latina (2.3%), and NA/AN (2.3%) women were about 28 times or more likely to report having no prenatal visits than white (0.8%) and AA/PI (0.7%) women. In terms of the quality of prenatal visits, NA/AN mothers (35%) were the most likely to have "inadequate" prenatal care, followed by Latina (30%) and Black (29%) mothers, with AA/PI (18%) and white (14%) mothers reporting significantly lower rates of "inadequate" prenatal care.* Notably, when turning to the variable "attendant at birth," NA/AN women (74.2%) were by far the least likely to have a

medical doctor. Similarly, NA/AN were by far the least likely to have a medical doctor attending their births, and by far the most likely to have a midwife attending their births. This could be due to different medical access for NA/AN women, but our data can't answer how much this might be driven by substandard healthcare on reservations, and how much is substandard healthcare for these women off of reservations.

Eighth, the findings on preterm births (PTBs) indicate that this most strongly impacts Black mothers (19%), followed by NA/AN (14%), Latina (12%), white (12%) and finally, AA/PI (11%) mothers (see Table 2). As one of the main focus of the thesis, these findings are consistent with PTB research, Black women have the highest rate of preterm births (e.g., Behrman, 2007; Martin, Hamilton, Menacker, Sutton, & Mathews, 2005; Ananth, Joseph, Demissie, & Vintzileos, 2005; Berkowitz, & Papiernik, 1993; Ananth, Joseph, & Kinzler, 2004). In relation to Latinas most literature state that Latina women have slightly higher rate of PTBs than white women, however my data shows no difference (e.g., Mason, Kaufman, Daniels, Emch, Hogan, & Savitz, 2011; Dunlop, Salihu, Freymann, Smith, & Brann, 2010; Fulda, Kurian, Balyakina, & Moerbe, 2014). This can be due to the Latin@ Paradox, as Latina and white women have a similar risk of delivering preterm babies (e.g., Hoggat, & Flores, 2011). In terms of AA/PI women my data is consistent with the literature, as AA/PI have low premature birth rates (Goldenberg, Culhane, Iams, & Romero, 2008).

Ninth, the 2006 *Nativity Detail* data on both unhealthy medical conditions of the mothers, and labor procedures used, indicate some strong racial/ethnic differences (see Table 2). Taken together, these data indicate the highest incidence of the various medical conditions among NA/AN (e.g., hypertension) and Black (e.g., chronic lung disease) mothers, although there are some medical conditions more predominant among white (i.e., cardiac problems) and AA/PI

(i.e., diabetes) mothers. In terms of the labor procedures and experiences, taken together, the data indicated significantly worst conditions among the NA/AN mothers (e.g., prolonged labor, excessive bleeding during labor, dysfunctional labor), and they were the least likely to receive ultrasound. These findings may be due to lack of medical attention, access to medicine/drugs, technology, and overall lack of resources that NA/AN women face.

Tenth, the findings on the unhealthy medical conditions of the newborns, indicate a broad range of conditions, many of which are more likely among one racial/ethnic group than another, but most are quite rare. Perhaps the most important finding is that the newborns of Black mothers (9%) are the most likely to be admitted to the NICU while babies of Latina mothers are least likely to be NICU admitted (5%).

Finally, the ANOVA findings on weeks in gestation (Table 4) and birth weight (Table 5) indicate that the babies of Black mothers are most compromised in terms of weeks in gestation, and that Black and AA/PI mothers' babies weigh the least.

Findings Consistent with the Latin@ Paradox

From the data analysis, it is evident that Latina mothers' and babies' have a protective mechanism against most medical conditions affecting other mothers' and babies' from other race/ethnicity, which is in most part due to the Latin@ paradox. The Latin@ paradox indicates that compared to white women's newborns, Latina immigrant women's newborns have about the same or even lower premature and low birth weight rates, regardless of barriers such as poverty, unemployment, lack of health care, language barriers, acculturation, discrimination, undocumented legal status, and so on (e.g., Ruiz, 2012; Hoggatt, Flores, 2011; Flores, Simonsen, Manuck, Dyer, & Turok 2012). However, the literature shows that U.S. born Latinas have higher premature and low birth weight rates as compared to Latina immigrants. Galvez, 2011; Ruiz,

2012; Hoggatt, & Flores, 2011; Flores, Simonsen, Manuck, Dyer, & Turok 2012). Latin@ immigrant women have fewer complications during a low birth weight because Latina women had a healthier diet, more exercise due to daily endowers, and followed ideas about pregnancy and childbearing that they gathered from their hometowns and from their mothers and grandmothers (Galvez, 2011). Also, according to Shaw, Kate, and Picket (2013) the benefits for women may result not only from the adoption of positive aspects of Latin@ culture, but also from the rejection of negative aspects of the broader U.S. culture. The Immigrant Paradox and Asian Paradox, show similar findings, thus it might also help explain the low prevalence of medical conditions for AA/PI the mothers' and babies' (e.g., John, Castro, Martin, Duran, & Takeuchi, 2012).

Policy Implications

The findings in this study support many of the contentions made by Matthew (2015) regarding the racist bias in the healthcare field, and indicating how this should include pregnancy, labor and delivery, and newborns. My findings very clearly indicate some of the worst conditions among NA/AI mothers and babies, suggesting that they are receiving some of the worst healthcare and face some of the worst structural poverty and racism. Black mothers and newborns also appear to encounter substandard healthcare and structural and other racism. Although my data cannot directly answer all of the sources of the significantly worse conditions for these mothers and babies, my findings offer support for radical changes in access to adequate education as well as adequate healthcare.

Future Research

The *Nativity Detail* data provide a unique and very large data set and should be used more consistently to examine a more detailed evaluation of mothers' and babies' health in terms of race/ethnicity. Indeed, it is surprising that I am the first to do this five-category racial/ethnic distinction. However, it would be useful to have even more nuanced race/ethnicity information, particularly in terms of bi- and multi-racial/ethnic identities. It would also be helpful to include stillborn births in the analyses, as these are significant health indicators. However, neither of these are possible with the current method of data collection by the *Nativity File*. Of course I advocate for using more than binary race/ethnicity measures not only for pregnancy, delivery, and newborn data other than the *Nativity Detail File*, but I also endorse that research in other areas of the medical field and in areas in addition to the medical field (e.g., education and the criminal legal system) should also use more nuanced and accurate race/ethnicity measures if we are truly willing to combat racial/ethnic oppression in medical and other fields.

CONCLUSION

In conclusion, it is evident that my research supports the Latin@ Paradox. As we can see, despite adversity, low resources, and oppression Latin@ babies had good health outcomes (PTB and LBW) similar to those of white women. The data shows that Latina women in comparison to white women (for purposes of the Latin@ Paradox) had the least education, started prenatal care at a later time during pregnancy, had low frequency of prenatal care visits, and had intermediate adequacy of prenatal care, while white women had the opposite in all these categories. However, when it came to preterm births and low birth weight Latin@ babies had the same or similar outcomes as white babies. Thus, indicating that Latin@ mothers have a protective mechanism that help their babies have healthy outcomes, even though they do not have the best resources

and privilege.

My research also includes Native American/Alaskan Native women and Asian American/Pacific Islander women, where these two populations are largely excluded in the literature. The data shows astonishing results involving NA/AN women and their babies, showing that they had the least resources, and worst health outcomes. Thus, the fact that NA/AN people are largely excluded from research despite their troubling health outcomes, may also be as a result of unconscious racism, where researchers might not take an interest in this particular population. In addition, systemic racism also plays a role where health resources are not provided for NA/ANs and they are largely isolated and excluded from society. Data on Asian American/Pacific Islander women and their babies also show important results. More research should be done to find an explanation as to why AM/PI have much healthier outcomes as compared to other race/ethnic groups, where the Immigrant Paradox might play a role.

Finally, racism in the medical field and in society as a whole is having a harmful impact on people of Color. Thus, to attack this problem there needs to be a strategic intervention to alter implicit (racist) biases, to thus reduce unconscious racism in the health field and in society. To do this Matthew proposes to, change the current informational inputs, so that the resulting stereotypes patterns no longer conform to traditional, discriminatory, or inequitable stereotypes, but instead lead individuals and institutions to more equitable judgments and more equitable conduct (Matthew 2015). Thus, changing how we perceive people of Color as a whole, the way they are depicted in the media, history and also teach history of people other than white (which leads to the decolonial imaginary by Emma Perez), and change how we treat each other and embrace differences rather than criticize and fear difference. Also, it is important to distinguish between equality and equity. This is because when civil rights and justice calls for equality

amongst races and ethnicities-and beyond, it does not mean that we need the exact same things as the privileged majority, but rather evenness, justice, and fairness, because equality does not accommodate for difference and diversity. Therefore, equity can provide the same law, justice, and education, opportunity to wealth, resources and positions of power, and health care for all people taking into account culture, religion, race/ethnicity, gender, sexuality and not only focusing on Eurocentric needs and wants. In addition, we need more people of Color and women in the health field, which will defiantly decrease unconscious racism thus far.

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APPENDIX A: MEDICAL DEFINITIONS

Abruptio placentae: is defined as the premature separation of the placenta from the uterus.
<http://emedicine.medscape.com/article/252810-overview>

Adactyly: Congenital absence of fingers or toes.
<http://www.rightdiagnosis.com/sym/adactyly.htm>

Amniocentesis: is a procedure in which amniotic fluid is removed from the uterus for testing or treatment.
<http://www.mayoclinic.org/testsprocedures/amniocentesis/basics/definition/prc-20014529>

Anemia: is a condition in which you do not have enough healthy red blood cells to carry adequate oxygen to the body's tissues.
<http://www.mayoclinic.org/diseases-conditions/anemia/home/ovc-20183131>

Anencephalus: is a severe neural tube birth defect where most of the brain and spinal cord are absent.
<http://www.health.state.mn.us/divs/cfh/topic/diseasesconds/anencephalus.cfm>

Anesthesia: means loss of feeling, either by way of going to sleep (general anesthesia) or just numbing an area or region of the body (for example, epidural anesthesia).
<http://www.sparrow.org/birthing-anesthesia>

Anesthetic Complications: although very rare, some people do inherit a genetic susceptibility to have dangerous reactions to anesthesia, such as a severe spike in blood pressure. So, it's always worth asking your family to make sure. If someone in your family has had such a reaction, tell your doctor.
<http://www.webmd.com/a-to-z-guides/anesthesia-risks-what-patients-should-know>

Antibiotics: Antibiotics are powerful medicines that fight bacterial infections.
<https://www.nlm.nih.gov/medlineplus/antibiotics.html>

Breeched: The baby's head is not in place for birth. There are several types of breech presentations, including frank breech (bottom first with feet up near the head), complete breech (bottom first with legs crossed Indian-style), or footling breech (one or both feet are poised to come out first).
http://www.babycenter.com/0_breech-birth_158.bc

Cephalopelvic disproportion (CPD): occurs when a baby's head or body is too large to fit through the mother's pelvis.
<http://americanpregnancy.org/labor-and-birth/cephalopelvic-disproportion/>

Cervical cerclage: is a procedure in which stitches are used to close the cervix during pregnancy to help prevent pregnancy loss or premature birth. The cervix is the lower part of the

uterus that opens to the vagina.

<http://www.mayoclinic.org/tests-procedures/cervical-cerclage/basics/definition/prc-20012949>

Chorioamnionitis: is a complication of pregnancy caused by bacterial infection of the fetal amnion and chorion membranes.

<http://emedicine.medscape.com/article/973237-overview>

Chronic hypertension: is a long-term condition in which your blood pressure (BP) is higher than normal.

<http://www.drugs.com/cg/chronic-hypertension.html>

Cleft lip: a cleft lip happens if the tissue that makes up the lip does not join completely before birth. This results in an opening in the upper lip.

<http://www.cdc.gov/ncbddd/birthdefects/cleftlip.html>

Cleft palate: happens if the tissue that makes up the roof of the mouth does not join together completely during pregnancy.

<http://www.cdc.gov/ncbddd/birthdefects/cleftlip.html>

Clubfoot: describes a range of foot abnormalities usually present at birth (congenital) in which your baby's foot is twisted out of shape or position. In clubfoot, the tissues connecting the muscles to the bone (tendons) are shorter than usual.

<http://www.mayoclinic.org/diseases-conditions/clubfoot/basics/definition/con-20027211>

Congenital Abnormalities-Birth defects: is a birth defect is a health problem or a physical abnormality that a baby has at birth. It can be very mild or severe. Some birth defects are life-threatening, in which case a baby may only live for a few months.

<http://www.childrenshospital.org/conditions-and-treatments/conditions/birth-defects-and-congenital-anomalies>

Cyanotic Congenital Heart Disease: refers to a group of many different heart defects that are present at birth (congenital) that result in a low blood oxygen level.

<https://www.nlm.nih.gov/medlineplus/ency/article/001104.htm>

Diaphragmatic Hernia: is a birth defect in which there is an abnormal opening in the diaphragm. The diaphragm is the muscle between the chest and abdomen that helps you breathe. The opening allows part of the organs from the belly to move into the chest cavity near the lungs.

<https://www.nlm.nih.gov/medlineplus/ency/article/001135.htm>

Down syndrome: is a condition in which extra genetic material causes delays in the way a child develops, both mentally and physically.

<http://kidshealth.org/en/parents/down-syndrome.html>

Dysfunctional labor: is a term used to describe abnormal uterine contractions that interfere with the normal progress of labor.

<http://www.birthsource.com/scripts/article.asp?articleid=73>

Eclampsia: are seizures (convulsions) in a pregnant woman. These seizures are not related to an existing brain condition.

<https://www.nlm.nih.gov/medlineplus/ency/article/000899.htm>

External cephalic version: is a process by which a breech baby can sometimes be turned from buttocks or foot first to headfirst. It is usually performed after 37 weeks gestation.

http://www.med.umich.edu/1libr/wha/wha_version_wha.htm

Febrile: Having or showing the symptoms of a fever. Fever is the temporary increase in the body's temperature in response to a disease or illness.

<https://www.nlm.nih.gov/medlineplus/ency/article/003090.htm>

Fetal distress: is an uncommon complication of labor. It typically occurs when the fetus has not been receiving enough oxygen. Fetal distress may occur when the pregnancy lasts too long (postmaturity) or when complications of pregnancy or labor occur.

<https://www.merckmanuals.com/home/women's-health-issues/complications-of-labor-and-delivery/fetal-distress>

Fetal distress: is the term applied to the condition of the fetus that is exhibiting heart rate signs of poor oxygenation.

<http://www.pregnancycrawler.com/fetal-distress.html>

Five Minute Apgar: is a quick test performed on a baby at 1 and 5 minutes after birth. The 1-minute score determines how well the baby tolerated the birthing process. The 5-minute score tells the doctor how well the baby is doing outside the mother's womb.

<https://www.nlm.nih.gov/medlineplus/ency/article/003402.htm>

Gastroschisis: is a birth defect of the abdominal (belly) wall. The baby's intestines stick outside of the baby's body, through a hole beside the belly button. The hole can be small or large and sometimes other organs, such as the stomach and liver, can also stick outside of the baby's body.

<http://www.cdc.gov/ncbddd/birthdefects/gastroschisis.html>

Hemoglobinopathy: is a group of disorders passed down through families (inherited) in which there is abnormal production or structure of the hemoglobin molecule.

<https://www.nlm.nih.gov/medlineplus/ency/article/001291.htm>

Hyaline membrane disease: is a respiratory disease of the newborn, especially the premature infant, in which a membrane composed of proteins and dead cells lines the alveoli (the tiny air sacs in the lung), making gas exchange difficult or impossible.

<http://www.medicinenet.com/script/main/art.asp?articlekey=10677>

Hydramnios: is a condition in which there is too much amniotic fluid around the fetus.

<https://www.urmc.rochester.edu/Encyclopedia/Content.aspx?ContentTypeID=90&ContentID=P02430>

Hydrocephalus: is a condition that occurs when fluid builds up in the skull and causes the brain to swell. The name means “water on the brain.”

<http://www.healthline.com/health/hydrocephalus#Overview1>

Hypospadias: is a condition in which the opening of the urethra is on the underside of the penis, instead of at the tip.

<http://www.mayoclinic.org/diseases-conditions/hypospadias/basics/definition/con-20031354>

Incompetent cervix: also called a cervical insufficiency, is a condition that occurs when weak cervical tissue causes or contributes to premature birth or the loss of an otherwise healthy pregnancy.

<http://www.mayoclinic.org/diseasesconditions/incompetentcervix/basics/definition/con-20035375>

Induction of Labor: is a procedure used to stimulate uterine contractions during pregnancy before labor begins on its own.

<http://www.mayoclinic.org/testsprocedures/laborinduction/basics/definition/prc-20019032>

Labor augmentation: is when a healthcare practitioner may try to help labor progress (or "augment" it) by doing something to stimulate the contractions. This is usually done when the contractions are not coming frequently or forcefully enough to dilate the cervix or help move the baby down the birth canal. http://www.babycenter.com/0_labor-augmentation_1195960.bc

Labor induction: also known as inducing labor -is a procedure used to stimulate uterine contractions during pregnancy before labor begins on its own. Successful labor induction leads to a vaginal birth.

<http://www.mayoclinic.org/testsprocedures/laborinduction/basics/definition/prc-20019032>

Limb Reduction Defect: Upper and lower limb reduction defects occur when a part of or the entire arm (upper limb) or leg (lower limb) of a fetus fails to form completely during pregnancy. The defect is referred to as a “limb reduction” because a limb is reduced from its normal size or is missing.

<http://www.cdc.gov/ncbddd/birthdefects/ul-limbreductiondefects.html>

Malformed Genital: when a child is born with genitals that are not clearly male or female (ambiguous genitals, or intersex state). Most children with ambiguous genitals are pseudohermaphrodites—that is, they have ambiguous external genital organs but either ovaries or testes (not both). Pseudohermaphrodites are genetically male or female.

<https://www.merckmanuals.com/home/children's-health-issues/birth-defects/genital-defects>

Meconium: is the early feces (stool) passed by a newborn soon after birth. It can happen during labor, this is referred as **meconium aspiration syndrome** occurs when a newborn baby breathes a mixture of meconium and amniotic fluid into the lungs around the time of delivery. It is a serious condition.

<https://www.nlm.nih.gov/medlineplus/ency/article/001596.htm>

Meningomyelocele: is a type of spina bifida.

<http://www.healthline.com/health/myelomeningocele>

Microcephaly: it is a rare neurological condition in which the infant's head is smaller than normal compared to other infants of the same age and sex. The condition can be present at birth or develop within the first few years of life.

<http://www.health.state.mn.us/divs/cfh/topic/diseasesconds/microcephalus.cfm>

Non-Vertex Presentation: is the presentation of any part of the fetal head, usually the upper and back part.

<http://medical-dictionary.thefreedictionary.com/vertex+presentation>

Oligohydramnios: is a condition in which there is too little amniotic fluid around the fetus.

<https://www.urmc.rochester.edu/Encyclopedia/Content.aspx?ContentTypeID=90&ContentID=P02430>

Omphalocele: is a birth defect in which an infant's intestine or other abdominal organs are outside of the body because of a hole in the belly button (navel) area. The intestines are covered only by a thin layer of tissue and can be easily seen.

<https://www.nlm.nih.gov/medlineplus/ency/article/000994.htm>

Other Chromosomal Anomalies: a chromosome anomaly, abnormality, aberration, or mutation is a missing, extra, or irregular portion of chromosomal DNA. It can be from an atypical number of chromosomes or a structural abnormality in one or more chromosomes.

<http://www.genome.gov/11508982>

Other Gastrointestinal Anomalies: Most congenital gastrointestinal anomalies result in some type of intestinal obstruction, frequently manifesting with feeding difficulties, distention, and emesis at birth or within 1 or 2 days.

<http://www.merckmanuals.com/professional/pediatrics/congenital-gastrointestinal-anomalies/overview-of-congenital-gi-anomalies>

Other Urogenital Anomalies: abnormal embryogenesis of the urinary and genital tracts.

<http://emedicine.medscape.com/article/1017296-overview>

Polydactyly: is a condition in which a person has more than five fingers per hand or five toes per foot.

<https://www.nlm.nih.gov/medlineplus/ency/article/003176.htm>

Precipitous labor: is defined as expulsion of the fetus within less than 3 hours of commencement of regular contractions.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4285060/>

Pregnancy-induced hypertension: which may also be called pre-eclampsia, toxemia, or toxemia of pregnancy- is a pregnancy complication characterized by high blood pressure,

swelling due to fluid retention, and protein in the urine.

https://my.clevelandclinic.org/health/diseases_conditions/hic_Am_I_Pregnant/hic_Premature_Labor/hic_Pregnancy-Induced_Hypertension

Premature rupture of membranes (PROM): is a rupture (breaking open) of the membranes (amniotic sac) before labor begins. If PROM occurs before 37 weeks of pregnancy, it is called preterm premature rupture of membranes (PPROM).

<https://www.urmc.rochester.edu/Encyclopedia/Content.aspx?ContentTypeID=90&ContentID=P02496>

Prolonged labor: also known as failure to progress, occurs when labor lasts for approximately 20 hours or more if it is a first-time mother, and 14 hours or more if she has previously given birth.

<http://americanpregnancy.org/labor-and-birth/prolonged-labor-failure-progress/>

Rectal atresia: is a rare condition in which the anus and sphincter muscles are normally developed, with usually no fistulous communication with the urinary tract.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2788447/>

Renal agenesis: is a condition in which a baby is missing one or both kidneys at birth. Unilateral renal agenesis (URA) describes the absence of one kidney. Bilateral renal agenesis (BRA) is the condition in which both kidneys are missing.

<http://www.healthline.com/health/renal-agenesis#Overview1>

Renal Disease or Chronic Kidney Disease or chronic kidney failure: describes the gradual loss of kidney function. The kidneys filter wastes and excess fluids from your blood, which are then excreted in the urine. When chronic kidney disease reaches an advanced stage, dangerous levels of fluid, electrolytes and wastes can build up in the body.

<http://www.mayoclinic.org/diseasesconditions/kidneydisease/basics/definition/con-20026778>

Seizures: occur when there is abnormal electrical activity in the brain.

<http://www.webmd.com/epilepsy/understanding-seizures-basics>

Spina bifida: Spina bifida is a birth defect in which the spinal canal and the backbone don't close before the baby is born. <http://www.healthline.com/health/myelomeningocele>

Steroid Administration (Corticosteroids): If a mother delivers before 34 weeks, receiving corticosteroid injections can greatly improve the baby's chances of doing well. Steroid treatment reduces the risk of lung problems for babies who are born early, particularly for those born between 29 and 34 weeks of pregnancy. The steroid treatment cuts the risk of lung disease in half and reduces a premature baby's risk of dying by up to 40 percent. Steroids may also help reduce other complications in the baby.

<http://www.healthline.com/health/pregnancy/preterm-labor-adjunctive-therapy#Corticosteroids2>

Syndactyly: it means that his fingers and/or toes are webbed or joined, and that the condition was present at birth.

<http://www.childrenshospital.org/conditions-and-treatments/conditions/syndactyl>

Tocolysis: is the slowing or halting of labor during the birth process.

<http://www.medicinenet.com/script/main/art.asp?articlekey=5806>

Tracheoesophageal fistula (TEF): is a congenital or acquired connection between the trachea and esophagus. TEFs often lead to severe and fatal pulmonary complications.

<http://emedicine.medscape.com/article/186735-overview>

Umbilical cord prolapse: is a complication that occurs prior to or during delivery of the baby.

In a prolapse, the umbilical cord drops (prolapses) through the open cervix into the vagina ahead of the baby. The cord can then become trapped against the baby's body during delivery.

https://my.clevelandclinic.org/health/diseases_conditions/hic_Am_I_Pregnant/hic_Premature_Labor/hic_Umbilical_Cord_Prolapse

APPENDIX B: THE FINDINGS TABLES

Table 1. Mothers' Demographic and Pregnancy Characteristics (N = 4,273,225)

Variable	Total %	Latina %	Black %	NA/AN %	AA/PI %	White %	X ² ^a
<u>Age (N = 4,242,758)</u>							1,952,51.3
<15	0.1	0.2	0.4	0.2	0.0	0.1	
15-19	10.2	14.0	16.8	17.1	2.8	7.4	
20-24	25.3	29.2	32.2	34.7	12.5	22.9	
25-29	27.7	27.0	24.9	25.5	27.8	28.8	
30-34	22.3	18.8	15.5	14.3	35.1	24.5	
35-39	11.7	8.8	8.1	6.6	17.9	13.4	
40-44	2.5	1.9	2.0	1.6	3.6	2.8	
45-49	0.1	0.1	0.1	0.1	0.2	0.2	
50-54	0.0	0.0	0.0	0.0	0.0	0.0	
<u>% Married (N = 4,242,758)</u>	61.5	50.3	29.3	34.7	85.0	73.4	529,116.5
<u>Education (N = 2,047,896)</u>							503,322.9
≤ 8 th grade	6.9	18.2	2.0	4.0	2.1	1.5	
9-12 th grade ^b	19.4	33.0	23.3	28.8	8.3	10.9	
HS/GED ^c	24.6	23.4	33.1	30.9	14.4	24.5	
Some College but No Degree	18.9	13.6	24.6	23.4	14.5	21.4	
Associate Degree	6.7	3.8	5.8	5.6	7.4	8.7	
Bachelor's Degree	15.9	5.9	8.0	5.5	33.3	22.2	
Master's Degree	5.9	1.6	2.7	1.4	14.3	8.6	
Doctorate/Prof'l	1.6	0.5	0.6	0.4	5.7	2.2	
<u>Mother's Weight Gain (N = 3,501,977)</u>							69991.2
16< pounds	13.1	15.7	18.8	17.2	10.0	10.9	
16-20 pounds	10.6	13.6	12.1	12.2	11.6	9.1	
21-25 pounds	13.4	14.7	13.0	13.2	16.3	12.8	
26-30 pounds	16.7	17.1	15.1	14.9	20.0	16.8	
31-35 pounds	13.4	12.5	10.9	11.3	15.3	14.4	
36-40 pounds	12.1	10.3	10.5	10.6	12.1	13.1	
41-45 pounds	7.2	5.8	6.1	6.4	6.2	8.0	
46 ≥ pounds	13.5	10.2	13.5	14.2	8.4	15.0	
<u>Mother's Cigarette Use (N = 2,151,951)</u>							51,512.7
Non-smoker	90.9	97.5	92.7	84.0	98.2	87.9	
1-5 Daily	3.5	1.4	4.3	7.4	1.0	4.0	
6-10 Daily	3.8	0.8	2.3	6.2	0.6	5.4	
11-20 Daily	1.6	0.2	0.7	2.1	0.2	2.4	
21-40 Daily	0.1	0.0	0.1	0.2	0.0	0.2	
41+ Daily	0.0	0.0	0.0	0.0	0.0	0.0	
<u>Mother's Alcohol Consumption (N = 2,169,602)</u>							1,320.7
Non-drinker	99.5	99.7	99.5	99.0	99.8	99.4	
1 per week	0.3	0.2	0.2	0.5	0.1	0.4	
2 per week	0.1	0.0	0.1	0.2	0.0	0.1	
3-4 per week	0.1	0.0	0.1	0.1	0.0	0.1	
5+ per week	0.1	0.0	0.1	0.2	0.0	0.1	

^a All of the racial/ethnic comparison Chi-Squares are significant at the p = .000 level.

^bWithout Diploma

^cGED or High School Diploma

Table 2. Mothers' Pregnancy and Labor/Delivery Histories (N = 4,273,225)

Variable	Total %	Latina %	Black %	NA/AN %	AA/PI %	White %	X^{2a}
<u>Live Birth Order (N = 4,220,287)</u>							
1	40.0	35.8	38.9	34.9	46.3	41.7	
2	31.9	30.4	28.7	27.3	35.4	33.2	
3	16.9	19.6	17.4	18.3	12.1	16.0	
4+ Live Birth	11.2	14.2	15.0	19.4	6.2	9.1	
<u># of Prenatal Visits (N = 4,110,820)</u>							
No visits	1.4	2.3	2.6	2.3	0.7	0.8	55,645.6
1 to 6 visits	8.9	11.9	13.6	18.9	7.7	6.3	
7 to 10 visits	31.5	35.0	33.6	35.5	32.9	29.1	
11 to 12 visits	26.2	23.7	22.0	20.6	27.6	28.4	
13+ visits	32.0	27.1	28.3	22.6	31.1	35.4	
<u>Month Prenatal Care Began (N = 2,687,150)</u>							
1 st trimester	83.2	77.2	76.1	69.4	85.1	88.1	103,296.9
2 nd trimester	13.2	17.7	18.2	22.5	11.9	9.6	
3 rd trimester	2.6	3.7	3.7	6.1	2.5	1.7	
No prenatal care	1.0	1.4	1.9	2.0	0.5	0.6	
<u>Adequacy of Prenatal Care (N = 1,413,750)</u>							
Inadequate	20.2	29.4	29.0	34.7	17.6	14.4	49,134.8
Intermediate	11.3	11.8	10.2	13.4	12.8	11.2	
Adequate	35.8	32.0	29.2	27.1	39.2	38.8	
Adequate +	32.7	26.8	31.5	24.8	30.4	35.6	
<u>Weeks in Gestation (N = 4,217,990)</u>							
Under 37 weeks	12.8	12.2	18.5	14.3	10.9	11.7	21,256.3
≥ 37 weeks	87.2	87.8	81.5	85.7	89.1	88.3	
<u>Plurality Births (N = 4,242,758)</u>							
Single	96.6	97.7	96.2	97.5	97.1	96.2	6,486.462
Twin	3.2	2.2	3.7	2.4	2.8	3.6	
Triplet	0.1	0.1	0.1	0.0	0.1	0.2	
Quadruplet	0.0	0.0	0.0	0.0	0.0	0.0	
Quintuplet+	0.0	0.0	0.0	0.0	0.0	0.0	
<u>Attendant at Birth (N= 4,240,582)</u>							
Medical Doctor	86.7	86.8	89.2	74.2	90.9	85.9	26,340.7
Osteopathy Doctor	4.8	4.0	3.2	6.2	2.6	5.8	
Certified Midwife	7.4	8.3	7.0	18.0	5.9	7.1	
Other Midwife	0.5	0.4	0.1	0.8	0.2	0.7	
Other	0.5	0.5	0.5	0.7	0.4	0.5	

(Table 2 Continued on Next Page)

Table 2. Mothers' Pregnancy and Labor/Delivery Histories (Continued)

Variable	Total %	Latina %	Black %	NA/AN %	AA/PI %	White %	X^{2a}
<u>Mothers' Unhealthy Medical Conditions^b</u>							
Anemia (N = 2,172,742)	2.6	3.0	3.9	5.8	2.2	2.0	6,216.0
Cardiac Problems (N = 2,172,742)	0.5	0.3	0.4	0.3	0.3	0.6	929.8
Chron. Lung Dis. (N = 2,172,742)	1.7	1.4	2.1	1.3	1.4	1.6	588.5
Diabetes (N = 4,230,258)	4.2	4.3	3.7	6.6	7.2	4.0	6,133.6
Genital Herpes (N = 2,172,742)	1.1	0.6	1.5	0.9	0.5	1.2	1,938.8
Hydram./Olig. ^c (N = 2,172,742)	1.4	1.6	1.6	1.9	1.7	1.4	261.0
Hemoglobinopathy (N = 2,172,742)	0.1	0.0	0.4	0.1	0.1	0.1	3,289.0
Chron. Hyperten. (N = 4,230,258)	1.1	0.5	2.1	1.4	0.6	1.1	9,534.9
Preg. Hyperten. (N = 4,230,258)	3.9	2.8	4.6	5.3	2.1	4.4	7,753.0
Eclampsia (N = 4,230,258)	0.2	0.2	0.4	0.4	0.2	0.2	686.8
Incomp. Cervix (N = 2,172,742)	0.3	0.2	0.6	0.2	0.3	0.3	1,003.6
Prev infant 4000+g (N = 2,172,742)	0.9	0.7	0.3	2.2	0.4	1.2	3,686.9
Prev. PTB or LBW (N = 2,172,742)	1.2	0.9	1.2	1.5	0.8	1.3	683.9
Renal Disease (N = 2,172,742)	0.4	0.4	0.2	0.5	0.3	0.4	534.6
Rh sensitization (N = 2,172,742)	0.8	0.4	0.4	0.4	0.2	1.1	3,759.1
Uterine Bleeding (N = 2,172,742)	0.5	0.4	0.3	0.4	0.4	0.5	335.3
Other Med'l Risk (N = 2,172,742)	22.2	21.8	24.8	28.0	21.2	21.4	2,627.1
<u>Labor Procedures^b</u>							
Failed Ext.Cephalic (N = 2,060,212)	0.1	0.1	0.1	0.3	0.1	0.1	253.6
Amniocentesis (N = 2,175,236)	1.3	0.8	0.8	0.8	2.4	1.5	3,010.1
Elec. Fetal Monit. (N = 2,175,236)	12.1	12.5	12.2	13.9	13.1	11.7	415.2
Induct. Labor (N = 4,236,461)	22.5	16.0	19.8	20.4	16.3	26.9	57,897.3
Stimul. of Labor (N = 2,175,236)	16.7	16.3	14.3	14.9	19.0	17.4	2,523.4
Tocolysis (N = 4,235,448)	1.7	1.2	2.0	2.2	1.2	1.9	2,766.0
Ultrasound (N = 2,175,236)	70.7	71.3	65.7	59.0	74.4	72.0	8,388.9
Prem. Memb. Rupt. (N = 2,058,264)	2.8	2.0	3.2	3.5	2.7	3.2	2,237.3
Precipitous Labor (N = 2,058,249)	2.3	1.9	2.8	3.0	2.2	2.5	1,008.8
Prolonged Labor (N = 2,058,249)	1.0	0.8	0.8	1.4	0.9	1.1	502.2
Inducted Labor (N = 2,061,225)	22.8	16.2	21.1	22.0	15.7	28.3	3,7570.6
Augment. Labor (N = 2,061,225)	19.6	17.1	21.1	21.2	19.4	20.8	3,984.6
Non-Vertex Pres. (N = 2,061,225)	1.8	1.3	1.7	1.8	1.9	2.2	1,898.4
Steroids (N = 2,061,225)	0.9	0.5	1.4	1.3	0.5	1.0	2,758.0
Antibiotics (N = 2,061,225)	15.1	10.6	20.9	17.4	11.7	16.9	20,612.1
Chorioamnionitis (N = 2,061,225)	1.1	1.2	1.2	1.0	2.1	0.9	1,323.5
Fetal Intolerance (N = 2,061,225)	4.5	3.3	6.1	4.0	4.1	5.0	4,455.4
Anesthesia (N = 2,061,225)	55.8	46.6	57.8	49.0	54.3	61.3	35,944.2
Febrile (N = 2,174,373)	1.6	2.0	1.6	1.3	2.8	1.4	1,804.9
Meconium (N = 4,235,598)	4.5	5.1	5.6	4.7	4.6	3.9	4,692.0
Abruptio Placenta (N = 2,174,373)	0.6	0.5	0.7	0.6	0.5	0.6	88.3
Placenta previa (N = 2,174,373)	0.3	0.3	0.3	0.2	0.6	0.4	224.3
Excess. Bleed. (N = 2,174,373)	0.7	0.8	0.5	1.7	0.8	0.7	865.8
Labor seizures (N = 2,174,373)	0.0	0.0	0.0	0.0	0.0	0.0	49.2
Dysfunct'l Labor (N = 2,174,373)	3.0	2.7	3.2	3.8	3.5	2.9	335.6
Breech (N = 4,137,312)	5.4	6.1	4.2	4.2	5.2	5.4	2,726.6
Ceph. Dispropor ^d (N = 2,174,373)	1.3	1.0	1.0	1.4	1.5	1.6	1,228.6

(Table 2 Continued on Next Page)

Table 2. Mothers' Pregnancy and Labor/Delivery Histories (Continued)

Variable	Total %	Latina %	Black %	NA/AN %	AA/PI %	White %	X^{2a}
Labor Procedures^a (cont'd.)							
Cord Prolapse (N = 2,174,373)	0.2	0.1	0.2	0.3	0.1	0.2	69.2
Anes. Comp. ^e (N = 2,174,373)	0.1	0.0	0.0	0.0	0.1	0.1	21.8
Fetal Distress (N = 2,174,373)	4.3	3.7	4.8	3.4	4.7	4.4	678.1
> Complications (N = 2,174,373)	16.8	17.5	15.8	19.3	18.1	16.8	662.9
Delivery Method (N = 4,228,286)							5,216.0
Vaginal	68.8	72.1	66.4	72.0	69.0	68.4	
Vag.w/ prev. C-sec	1.0	1.2	1.0	1.3	1.1	0.9	
Primary C-section	18.1	14.7	19.9	15.0	19.5	18.6	
Repeat C-section	12.1	12.0	12.7	11.7	10.4	12.1	

^aAll of the relationships reported in this table reached the significance of $p = 0.000$.

^bThe following conditions/procedures are reported as the percent who experienced them. Women could experience more than one of these conditions/procedures, they are not mutually exclusive.

^dCephalopelvic Disproportion

^eAnesthetic Complications

Table 3. Babies' Characteristics (N = 4,273,225)

Variable	Total %	Latina %	Black %	NA/AN %	AA/PI %	White %	X²
<u>Sex of Baby (N=4,242,758)</u>							39.2**
Female	48.8	48.9	49.0	49.1	48.5	48.7	
Male	51.2	51.1	51.0	50.9	51.5	51.3	
<u>Birth weight (N=4,238,348)</u>							34,339.9**
< 1499g	1.5	1.2	3.2	1.3	1.1	1.2	
1500-2499g	6.8	5.8	10.8	6.2	7.0	6.1	
2500g+	91.8	93.0	86.0	92.5	91.9	92.7	
<u>Babies' Medical Conditions^a</u>							
Hyaline Membrane Disease N=2,170,497)	0.6	0.4	0.7	0.6	0.4	0.7	613.9**
Meconium Aspir. Syndrome (N=2,170,497)	0.1	0.2	0.1	0.3	0.1	0.1	141.4**
Seizures (N=2,170,497)	0.0	0.0	0.0	0.1	0.0	0.1	71.2**
Cleft Lip/Palate (N=4,192,760)	0.1	0.1	0.0	0.1	0.1	0.1	249.4**
Club Foot (N=2,137,727)	0.1	0.1	0.0	0.1	0.0	0.1	70.7**
Heart Malformation (N=2,137,727)	0.2	0.1	0.2	0.1	0.1	0.2	78.0**
Down Syndrome (N=4,192,760)	0.0	0.0	0.0	0.0	0.0	0.1	77.2**
Assisted Ventilation (N=2,056,487)	4.3	3.0	5.8	5.4	2.6	4.9	6,111.4**
Admission to NICU (N=2,056,485)	6.1	5.0	8.8	6.9	4.9	6.4	4,751.8**
Surfactant (N=2,056,490)	0.3	0.2	0.5	0.5	0.1	0.4	1,072.2**
Birth Injury (N=2,170,497)	0.4	0.4	0.2	0.4	0.6	0.4	631.4**
>Abnormal Conditions (N=2,170,497)	4.9	5.2	4.6	7.7	4.4	4.8	18.2*
>Congenital Anomalies (N=2,137,727)	0.4	0.5	0.4	0.5	0.9	0.4	745.5**
>Musculoskeletal Anomalies (N=2,137,727)	0.3	0.3	0.4	0.1	0.4	0.2	656.9**
>Chromosom. Anom. (N=2,137,727)	0.0	0.3	0.0	0.1	0.0	0.0	18.2*
> Circ./Resp. Anom. (N=2,137,727)	0.1	0.1	0.1	0.2	0.1	0.1	58.3**
<u>Five Min Apgar (N=3,673,169)</u>							9776.6**
Score of 0-3	0.5	0.4	1.0	0.5	0.3	0.4	
Score of 4-6	1.1	0.8	1.6	1.1	0.7	1.0	
Score of 7-8	10.2	8.8	10.7	9.8	7.6	10.7	
Score of 9-10	88.3	90.0	86.7	88.7	91.4	87.9	

* p ≤ .001

** p ≤ .0001

^aThe following conditions are reported as the percent who experienced them. Babies could experience more than one of these conditions, they are not mutually exclusive. Also, there were additional medical conditions not reported in this table either because there were no racial/ethnic differences (i.e., anemia, anencephaly, hydrocephalus, microcephalus, other central nervous anomaly not specifically collected), or they were so rare (i.e., fetal alcohol syndrome, Meningomyelocele/Spina Bifida). Some of these are reported in the text.

Table 4: Mean Gestation in Weeks by Mothers' Race/Ethnicity ANOVA

<u>Mother's Race/Ethnicity</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Error</u>
Latina	1,033,239	38.6	2.6	.002
Black	614,851	38.0	3.1	.004
NA/AN	42,043	38.6	2.7	.013
AA/PI	226,152	38.6	2.3	.005
White	2,301,705	38.6	2.4	.002

df = 4

F = 8,525.4

p = .000

<u>Multiple Comparisons of Means</u>	<u>Mean Difference</u>	<u>Std. Error</u>	<u>Sig.</u>
Latina v. Black	.586*	.004	.000
Latina v. AI/AN	.061*	.013	.000
Latinas v. AA/PI	.010	.006	.433
Latina v. White	-.002	.003	.955
Black v. AI/AN	-.525*	.013	.000
Black v. AA/PI	-.576*	.006	.000
Black v. White	-.588*	.004	.000
AI/AN v. AA/PI	-.051*	.014	.002
AI/AN v. White	-.063*	.013	.000
AA/PI v. White	-.012	.006	.191

Table 5: Babies Birth Weight in Grams by Mothers' Race/Ethnicity ANOVA

<u>Mother's Race/Ethnicity</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Error</u>
Latina	1,044,805	3279.7	565.1	.553
Black	616,525	3063.4	651.9	.830
NA/AN	42,182	3320.3	605.1	2.946
AA/PI	227,839	3198.5	541.5	1.134
White	2,306,997	3318.0	586.4	.386

df = 4

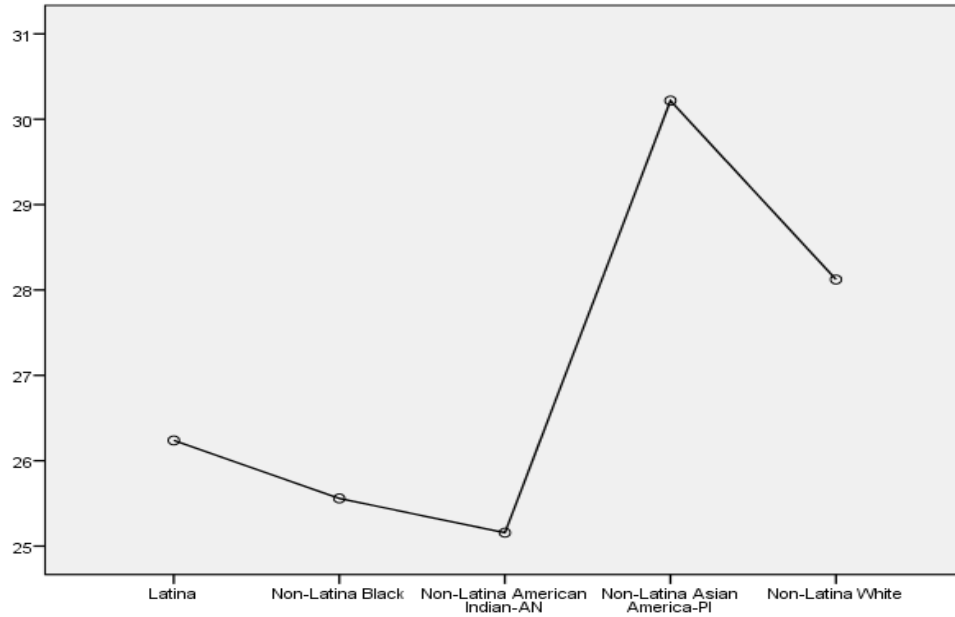
F = 23,905.0

p = .000

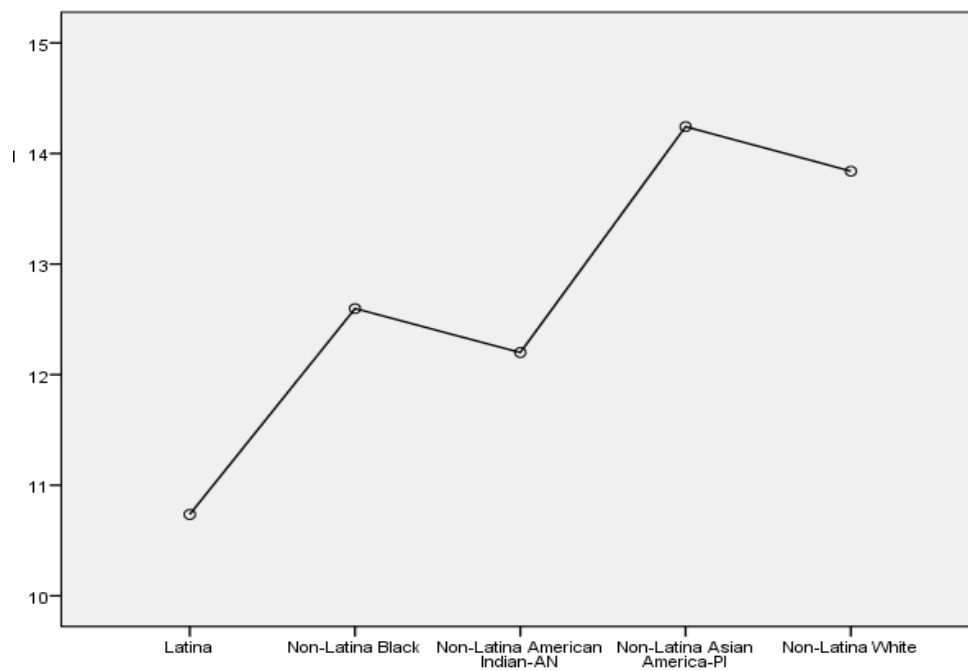
<u>Multiple Comparisons of Means</u>	<u>Mean Difference</u>	<u>Std. Error</u>	<u>Sig.</u>
Latina v. Black	216.3*	0.9	.000
Latina v. AI/AN	-40.6*	2.9	.000
Latinas v. AA/PI	90.2*	1.4	.000
Latina v. White	-38.3*	0.7	.000
Black v. AI/AN	-256.9*	3.0	.000
Black v. AA/PI	-126.0*	1.4	.000
Black v. White	-254.6*	0.8	.000
AI/AN v. AA/PI	130.9*	3.1	.000
AI/AN v. White	2.3	2.9	.932
AA/PI v. White	-128.6*	1.3	.000

APPENDIX C: ANOVA MEAN PLOTS

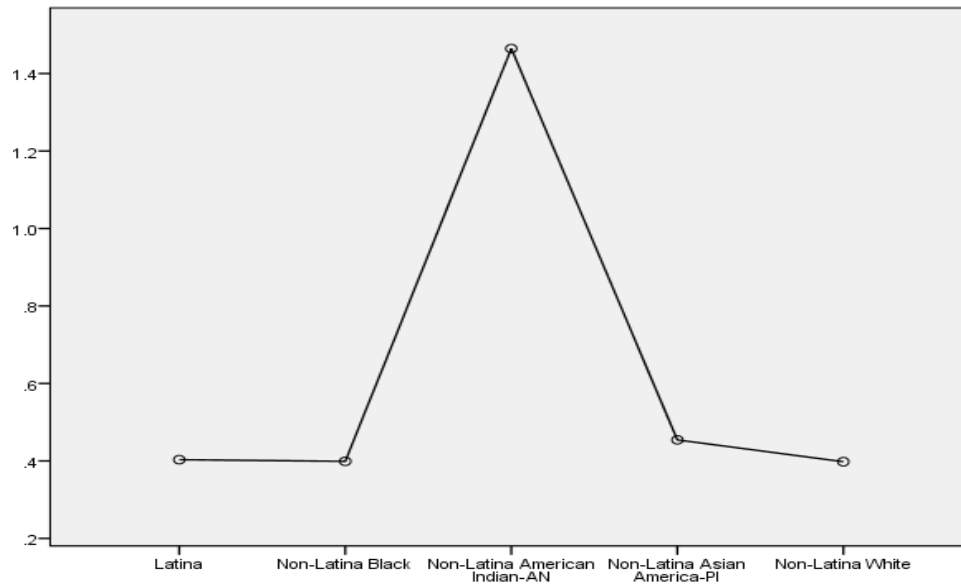
Plot 1: Mean Mothers' Age x Mothers' Race/Ethnicity
N = 4,273,225; Mean = 27.38



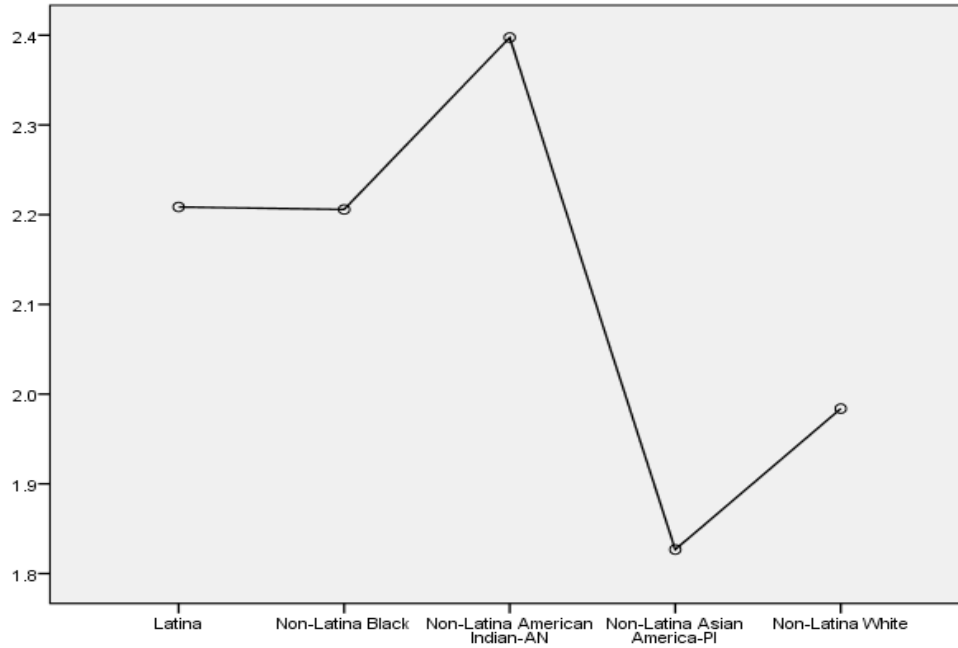
Plot 2: Mean of Mothers' Education x Mothers Race/Ethnicity
N = 2,166,437; Mean = 13.1



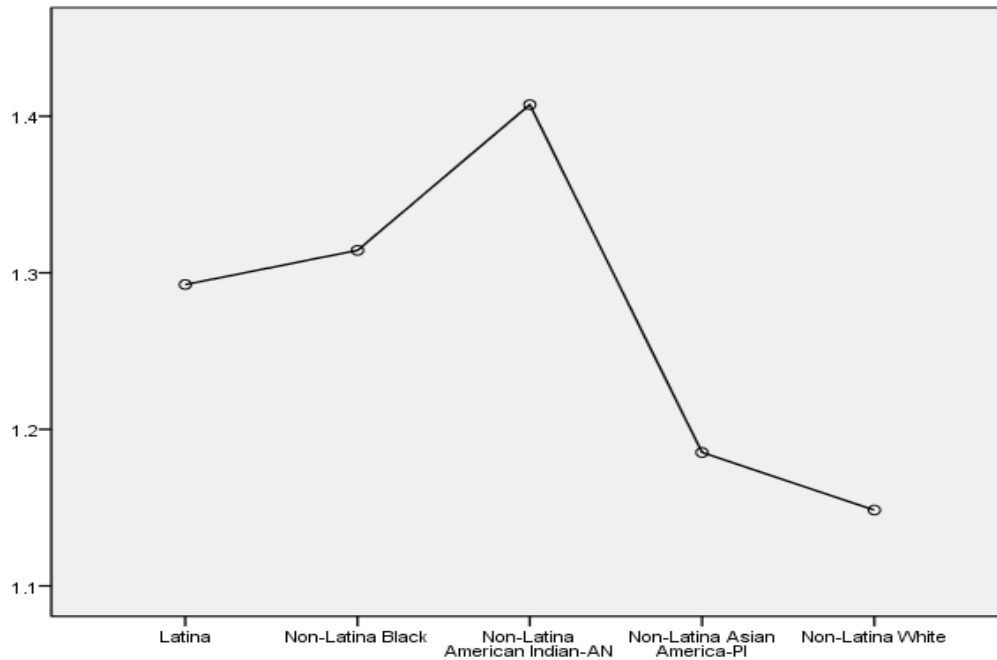
Plot 3: Mean of Drinks per Week x Mothers' Race/Ethnicity
N = 4,249,474; Mean = 0.46



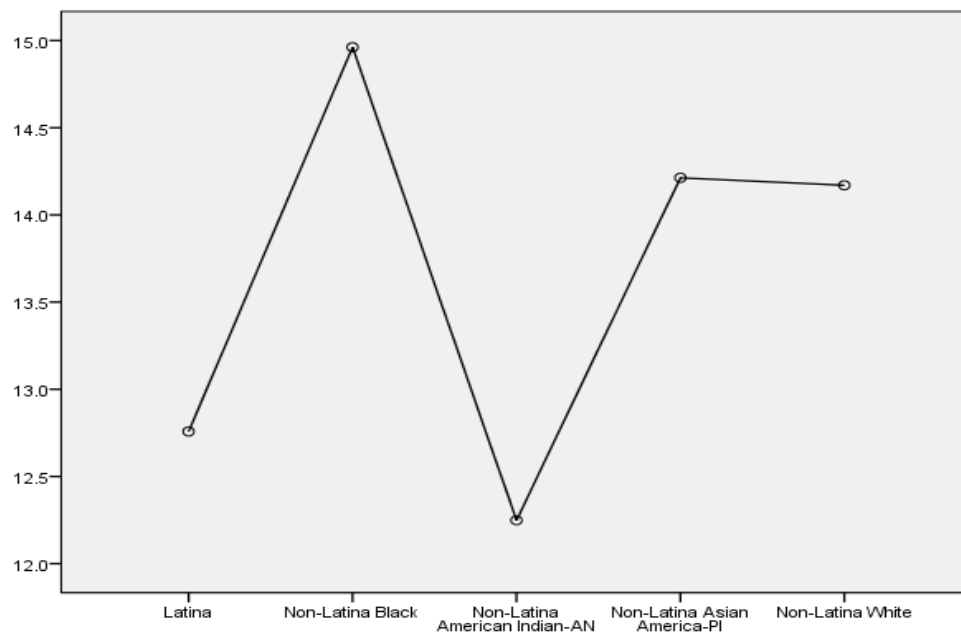
Plot 4: Mean Number in Birth Order x Mothers' Race/Ethnicity
N = 4,249,474; Mean = 2.07



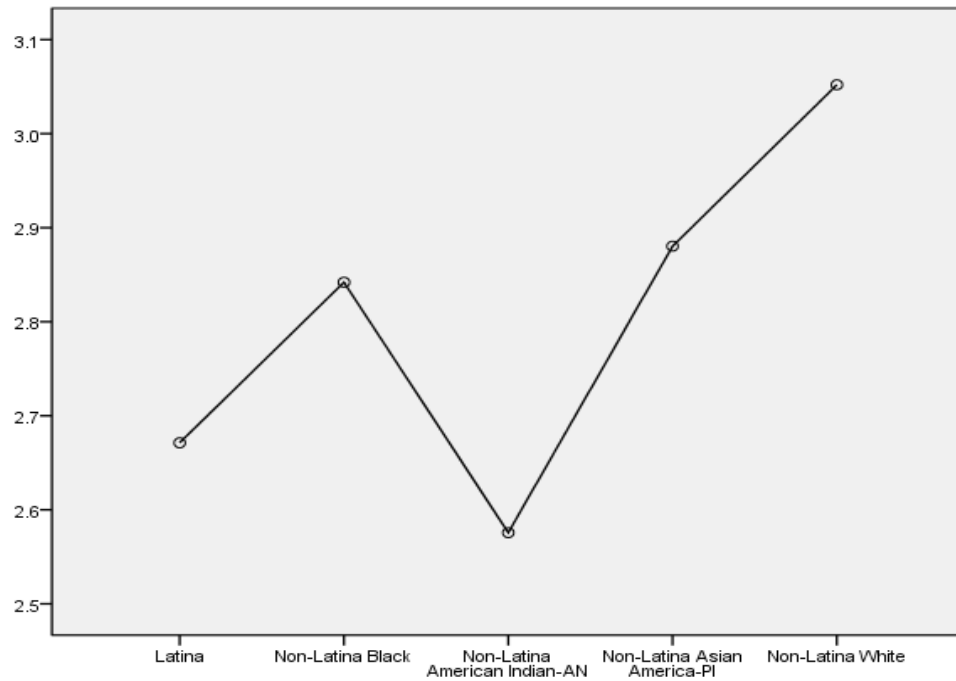
Plot 5: Mean Month Prenatal Care Began x Mothers' Race/Ethnicity
N = 2,708,500; Mean = 1.21



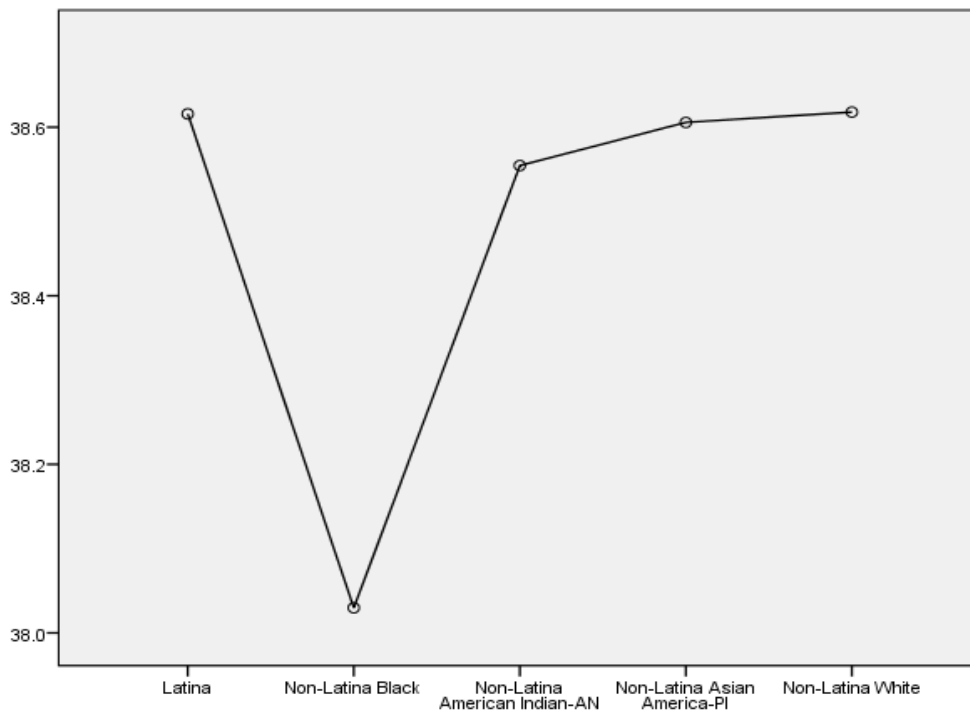
Plot 6: Mean Number of Prenatal Visits x Mothers Race/Ethnicity
N = 4,273,225 Mean: 14.0



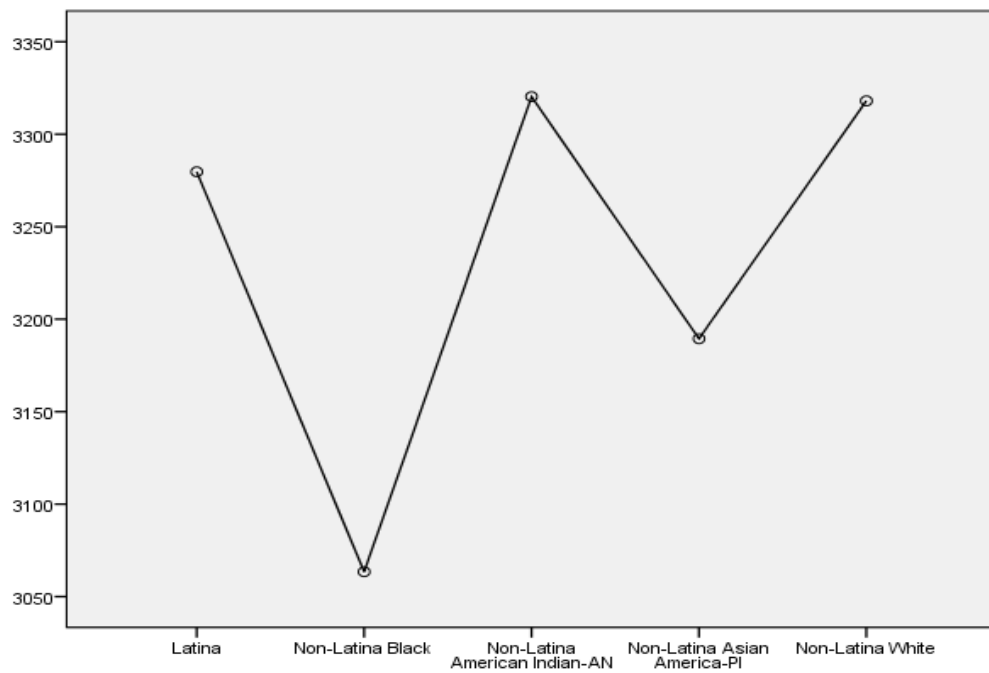
Plot 7: Mean of Adequacy of Prenatal Care x Mothers' Race/Ethnicity
N = 1,413,750, Mean = 2.81



Plot 8: Mean of Weeks in Gestation x Mothers' Race/Ethnicity
N = 4,247,496 Mean: 38.5



Plot 9: Mean of Birth weight x Mothers' Race/Ethnicity
N = 4,273, 225 Mean = 3,272.0



Plot 10: Mean of 5 Minute APGAR x Mothers' Race/Ethnicity
N = 3,694,317; Mean = 8.85

