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## Disparities in infant mortality: are sociocultural risk factors shaped by institutionalized racism?

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DISPARITIES IN INFANT MORTALITY: ARE SOCIOCULTURAL RISK FACTORS  
SHAPED BY INSTITUTIONALIZED RACISM?

A Thesis Submitted  
in Partial Fulfillment  
of the Requirements for the Designation  
University Honors

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Entitled: Disparities in Infant Mortality: Are Sociocultural Risk Factors Shaped by Institutionalized Racism?

has been approved as meeting the thesis or project requirement for the Designation

University Honors

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## CHAPTER I

### Introduction

#### Problem

The infant mortality rate (IMR) is an incredibly important indicator of the overall health of a nation. Because the IMR is so closely related with factors such as quality and accessibility of healthcare and socioeconomic conditions, it is helpful in evaluating a nation's success. The United States (US) has one of the highest infant mortality rates among countries with a similar degree of economic development (those belonging to the OECD). In 2013, the IMR was 5.96 deaths per 1,000 live births, according to the Centers for Disease Control and Prevention, or CDC (Mathews, MacDorman, & Thoma, 2015). Furthermore, this rate differs greatly across races in the United States, resulting in an undeniable health disparity. The lowest infant mortality rate in the country is that of Cubans (3.02 infant deaths per 1,000 live births), while the rate of White Americans is 5.06 (Mathews et al., 2015). More than three times higher than Cubans and twice as high as White Americans, the IMR for Black Americans is 11.11 infant deaths per 1,000 live births (Mathews et al., 2015). When such a large disparity exists between the various racial groups of one country, questions can be raised about the ways in which the US social structure impact citizens to varying degrees and whether the history of institutionalized racism has shaped that structure.

#### Purpose

The purpose of this thesis is to identify sociocultural risk factors for disparities in IMR in the US and explore whether institutionalized racism contributes to those risk factors. An extensive body of research has documented the relationship between stress during pregnancy and negative birth outcomes such as preterm birth, a leading cause of infant mortality. In addition, it

is clear that US disparities of IMR exist based on race. Literature will be examined to determine whether and how experiences related to racism at each level of the Social Ecological Model contribute to this health disparity. A better understanding of the possible ways institutionalized racism affects infant mortality and our nation's health will help communities develop health promotion efforts to end this disparity.

### **Research Questions**

1. What sociocultural risk factors contribute to higher rates of infant mortality among Black American women?
2. How do factors related to institutionalized racism contribute to stress and infant mortality?
3. How can health education and health promotion interventions be used to reduce this disparity?

## CHAPTER II

### Literature Review

In order to understand the potential relationship between the infant mortality rate of Black Americans and sociocultural risk factors influenced by racism, a variety of literature was reviewed and analyzed. To begin, the Social Ecological Model (SEM) was used as a theoretical framework for this research. Next, research was reviewed concerning the various risk factors for infant mortality, including preterm birth, low birthweight, and most importantly, stress. The sociocultural risk factors were then studied and broken down by each level of the SEM: individual, relationship, community, and societal. Finally, research concerning the history of interventions and their potential impacts on racial infant mortality disparities was examined.

### Methods

This thesis research was conducted using secondary data through an extensive literature review. The literature searches were completed using search databases through the University of Northern Iowa Rod Library and Google Scholar. Terms used for the search are provided in Table 1. Only journals published since 2006 (the past ten years) were used in order to keep data relevant and up-to-date. However, articles published before 2006 that were referenced frequently were considered seminal works and included in this review as well.

Along with academic peer-reviewed journals, several websites were used for gathering general information, definitions for key terms, and statistics. The websites chosen for research came from reliable sources funded by the government or a large-scale program, including the domains .org, .gov, and .int. Examples of these websites are Healthy People 2020 and the CDC. Other media and news examples that highlighted the cultural context of race in the US were also used.

Table 1: Search terms	
Racism	Stress Pregnancy Non-Hispanic Black OR African American OR Black American
Infant mortality	Preterm Stress Non-Hispanic Black OR African American
Intervention AND Racism	Infant mortality Preterm Pregnancy

### Theoretical Framework

Because of the variety of manners in which racism can present itself, the SEM can be used to categorize the potentially influencing sociocultural factors. For this purpose, the model from the CDC's Framework for Prevention was used (Figure 1). This particular model consists of four levels: individual, relationship, community, and societal (CDC, 2015). This model assisted in framing sources of stress that may impact the infant mortality rate of Black Americans. In order to better understand the SEM and how it can assist in explaining sociocultural risk factors related to infant mortality, it is necessary to explain each level individually.





Figure 1: Social Ecological Model, CDC Framework for Prevention

Source: <https://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html>

The individual level includes personal characteristics, including one's income, education, gender, age, knowledge, attitudes, behaviors and health history. For example, an expecting mother who does not have her high school diploma may not have the education or knowledge to make appropriate decisions in regard to the fetus's health, simply because she does not know the risks.

Next, the relationship level of the SEM includes a person's family, friends, partner and social network. Those who are closest to or have frequent contact with an individual can have a large impact on the way they cope with stress or even influence the stress that the individual may feel. The interactions at the relationship level can also influence a person's decisions. If an individual's spouse who they spend a substantial amount of time with, chooses to exercise regularly, that individual may be more likely to exercise as well. On the other hand, if their significant other makes a comment about their weight or appearance, they will experience emotions that may potentially cause stress.

The third level is focused on the community. This level is composed of many environments including neighborhoods, workplaces, and schools. For example, in the context of prenatal care, the presence or absence of accessible and affordable healthcare options in a

community might impact whether low-income women are able to receive the recommended levels of care.

Lastly, this version of the SEM ends with the societal level. This level is made up of cultural and social norms, economics, and policies that impact education and health. According to the the CDC's framework, these policies "help to maintain economic or social inequalities between groups in society" (CDC, 2015, n.p.). An example of a social norm would be the concept that birth should occur in a hospital, rather than at home. Women may feel more comfortable planning to deliver in a hospital room because of this standard in our society. Social norms can influence whether a certain behavior seems acceptable or not and therefore, may influence decisions, including those related to health matters.

The IMR disparity is multi-faceted and presents itself in many different manners and environments. For this reason, the sociocultural risk factors which impact infant mortality will be categorized into these levels in order to better understand the multitude of this issue. Although the levels can overlap, they will be separated for the purpose of this thesis.

### **Current Trends in Infant Mortality**

Even without the infant mortality disparity in the United States, the rate is still alarmingly high when compared to other OECD countries. The Organization for Economic Co-operation and Development (OECD) is a collaboration of several countries to "promote policies that will improve the economic and social well-being of people around the world" (OECD, n.d., n.p.). The countries belonging to this group have similar economies and work together to overcome challenges that they all face, whether that be improving social security or school systems, or implementing standards for chemical safety or agricultural practices. The United States belongs to this organization, along with many European countries, Australia, Israel, Canada, Mexico, and

several more. When aligned with these countries, the infant mortality rate of the United States is shockingly high.

In fact, of the 29 countries belonging to the OECD, the United States ranked 26th in infant mortality in 2010, meaning its IMR was higher than 25 other countries (MacDorman, Mathews, Mohangoo, & Zeitlin, 2014). In order to accurately compare the infant mortality rates, the United States' 2010 rate of 6.1 deaths per 1,000 live births was adjusted to 4.2 by excluding the births that occurred at less than 24 weeks of gestation. After this adjustment, the only two countries with a higher rate than the United States were Poland and Ireland. This rate was twice as high as the rates of the lowest countries: Finland, Sweden, and Denmark. Not only was the rate of the United States higher than the majority of the European countries, but it was also higher than Japan, Israel, Australia, Korea, and New Zealand as well (MacDorman et al., 2014). The high infant mortality rate is not something that is seen in countries of the same economic development.

The IMR for Black Americans in the US is 11.11 deaths per 1,000 live births, twice as high as White Americans (5.06). Not only does this racial health disparity exist largely across the country, but it exists in each state as well. In Kansas, the infant mortality rate for Black Americans between 2011 and 2013 was 14.18 deaths per 1,000 live births, nearly three times higher than the national average. For the same state, the infant mortality rate for White Americans is 5.54 deaths (Mathews et al., 2015). This large difference is not limited to Kansas, and in fact, although high, is not even the greatest disparity. The largest disparities comparing infant mortality of Black Americans and White Americans exist in New Jersey, Connecticut, Wisconsin, Illinois, Maryland and Utah. In each of these states, the infant mortality of Black

Americans is at least 2.7 times greater than the rate of White Americans (Mathews et al., 2015). These large disparities are a source of serious concern regarding infant health in this country.

Since 2005, the IMR in the US has decreased by nearly 13% from 6.86 to 5.96 deaths per 1,000 live births, a significant improvement (Mathews et al., 2015). Even though IMRs in the US have improved for all races since 2005, the disparity between Black Americans and White Americans has doubled in that same time period and still exists in every state in the country, instilling the disparity even deeper.

### **Risk Factors for Infant Mortality**

There are many risk factors contributing to infant mortality, including preterm birth, low birthweight, and prenatal stress. The prevalence of each of these risk factors varies by race. Additionally, age of mother, marital status, and multiple births all impact the rates of infant mortality in the United States. However, because these rates do not show significant differences among races, they were not analyzed for the specific purpose of this thesis.

**Preterm birth.** One of the most significant risk factors is preterm birth, which occurs when the gestational age, or how far along a pregnancy is, of an infant is 37 weeks or less. The CDC states that “gestational age of an infant is perhaps the most important predictor of his or her survival and subsequent health” (Mathews et al., 2015, p. 5). In 2013 nearly 35% of infant deaths were related to preterm causes. Not only are preterm infants at greater risk for health issues than full-term infants because of a lack of complete development, but their small size puts them at an even greater risk, making them more susceptible to both short-term and long-term health issues.

Regarding variations by race, Black American women are more likely to give birth early (before 37 weeks gestation) than other races. This may account for a large part of the disparity in infant mortality. According to a 2013 report by the CDC, 16.3% of Black American women gave

birth preterm while the rate of White American women was calculated at 10.2% (Mathews et al., 2015). Additionally, 44% of infant deaths for Black American women are attributed to causes related to preterm birth, making this specific IMR 490.9 deaths per 100,000 live births, three times higher than the rate for White American women (159.1).

**Low birthweight.** Low birthweight also has a significant impact on the likelihood of infant mortality. Infants born weighing less than 2,500 grams are considered low birthweight. The infant mortality rate for these infants is 25 times higher than those at a normal and healthy weight of at least 2,500 grams; in 2013, the IMR for low birthweight infants was 50.26 compared to 2.05 for those 2,500 grams and more (Mathews et al., 2015). When an infant is born weighing less than 1,500 grams, what is known as *very low birthweight*, the IMR skyrockets to 100 times the rate for infants of a healthy birthweight to 219.56 deaths per 1,000 live births in 2013. While the infant mortality rate for low birthweight infants in the country in 2013 was 50.26 deaths per 1,000 live births, the rate for Black Americans was more than two times higher for than White American women; more than 13% of Black Americans' births were low birthweight (Mathews et al., 2015).

**Maternal complications.** Another factor that contributes to infant mortality and varies by race is maternal complications. The CDC considers multiple pregnancy (e.g. having twins or triplets), incompetent cervix (a controversial term), and premature rupture of membranes to be examples of maternal complications. According to the Mayo Clinic, an incompetent cervix “occurs when weak cervical tissue causes or contributes to premature birth or the loss of an otherwise healthy pregnancy” (n.d., n.p.). Yet, this term is sometimes used in order to increase the use of medical interventions to speed labor; the research is limited. Premature rupture of membranes simply means that a woman's water broke too early. However, it can cause further

complications, including infection for both mother and baby, as well as the risks that come with premature birth. The infant mortality rate for Black Americans related to these causes is nearly three times greater than White American women. In 2013, the rate for Black Americans was 86.5 deaths per 100,000 live births while that of White Americans was 29.8 (Mathews et al., 2015). It is difficult to understand why these rates were higher for Black American women when compared to their White counterparts, as research is limited.

**Chronic stress.** Lastly, there is sufficient research to support that stress causes health issues, including adverse birth outcomes such as preterm birth and low birthweight. Stress can stem from a variety of situations: prenatal life events, anxiety, national tragedies, and more (Rosenthal & Lobel, 2011). Some types of stress may impact birth outcomes more than others. For example, in a study done by Dunkel-Schetter and Tanner (2012), it was discovered that chronic stressors, or stress that occurred over long periods of time, were greater predictors for low birthweight when compared to major life events. Chronic stress creates a greater impact on health outcomes because it is an allostatic load: “wear and tear” on the body’s systems. This load then causes the body to be unable to appropriately function, or maladapt; on the other hand, acute stress is simply an adaptive process (Giurgescu et al., 2011). According to Juster, McEwen, and Lupien (2010), the physiological changes as a result of chronic stress are “catalysts of accelerated aging and agitators of disease trajectories” (n.p.). The allostatic load model helps to break down the physiological effects that chronic stress impacts on the body. When an individual is stressed, their body releases stress hormones, including epinephrine, norepinephrine, adrenaline, and cortisol. These hormones normally function to maintain blood pressure and other bodily functions during times of stress. However, chronic stress causes the secretion of these hormones to be prolonged, then causing the body’s systems to maladapt (Juster, McEwen, &

Lupien, 2010). To begin, other systems of the body will start to overcompensate to attempt to correct these issues; the hormones are no longer protecting the person, but causing further damage. As the stress and secretion continues, the body's metabolism, cardiovascular and immune systems become impacted. The body does not function normally and suffers from physiological dysregulations as a result (Juster, McEwen, & Lupien, 2010).

For Black American women specifically, racism is a major source of chronic stress which is contributing to adverse health outcomes, including infant mortality. It is a source of stress which is not experienced by White American women in the United States. This type of bias and discrimination “is associated with higher levels of psychological distress, depression, anxiety, and multiple indicators of poor physical health” (Richman & Jonassaint, 2008, n.p.). The authors conducted a study with a group of Black American college students. The participants watched a video either related to their identification as a student or by their race. However, the Duke Lacrosse scandal occurred while the study was going on. This scandal occurred when a Black American woman accused three white, male, Lacrosse players from Duke University of raping her. The men were found innocent. In the study, this scandal was regarded as a “real-life racial stressor” and was found to be linked with increased levels of cortisol (Richman & Jonassaint, 2008, n.p.). Curiously, the cortisol levels were even higher for the Black American women in the study, suggesting that women and men may have varying responses regarding stressors (and that the females may have experienced the compound effects of stress as a Black American *and* stress as a female). The results of the study suggest that race-related stress increases cortisol levels and thus changes the physiological responses to stress. These responses then cause prolonged secretion of stress hormones, creating adverse, long-term health outcomes.

Although there are many risk factors for infant mortality, low birthweight and preterm births, often influenced by stress, account for a large fraction of infant deaths in the United States. These rates are considerably greater for Black American women. According to Rosenthal and Lobel (2011), women who experienced high amounts of discrimination based on race were 1.4 times more likely to give birth preterm. It is important to note that there is no biological difference between Black American women and women of other races that increases their likelihood of adverse birth outcomes. Rosenthal and Lobel (2011) shared results from a study that compared birth outcomes of Black immigrants and Black Americans. The study concluded that Black immigrants in the US have lower rates of infant mortality, preterm birth, and low birthweight when compared to those native to the US. In fact, results showed that the longer a Black immigrant lived in the United States, the worse their health outcomes became. Because no biological difference exists that impacts this disparity, the issues discussed in this thesis must be related to sociocultural factors.

### **Sources of Institutionalized Racism**

Although there are many sociocultural factors that may contribute to negative birth outcomes, there are several that are not the focus of current interventions and research. These factors may disproportionately cause stress among Black Americans compared to other races. Socioeconomic status and education affect health outcomes of all populations, but a disparity in infant mortality still exists even when these specific factors are controlled for. Even when gestational age, medical risk, and spontaneous labor are all controlled for, Black American women are still at greater risk of giving birth to a low birthweight infant (Rosenthal & Lobel, 2011). Clearly, there are underlying issues.



It is no secret that the US has a long and ugly history of racism. In 1993, Krieger, Rowley, Herman, Avery, and Phillips defined racism as “a multidimensional construct that involves the oppression, domination, and denigration of individuals by other individuals and by social institutions on the basis of skin color and/or membership in a particular ethnic group” (Dominguez, T. P., Dunkel-Schetter, C., Glynn, L. M., Hobel, C., & Sandman, C. A., 2008, p. 195). This construct occurs at many levels, including through systematic discrimination instilled in the way our country functions. Institutionalized racism includes the “macro level barriers to racial and ethnic minority inclusion and advancement” (Dominguez et al., 2008, p. 195). Racism is especially harmful compared to other forms of stress because it attacks a characteristic that cannot be changed. Because racism can be experienced in many different manners, the SEM is appropriate for categorizing sociocultural risk factors that are shaped by institutionalized racism at the individual, relationship, community, and societal levels.

**Individual factors.** Regarding the way racism causes stress, the factors at the individual level will focus on how an individual copes with stress and/or how they are impacted individually by stress. In the US, the individual may be strongly impacted by the longstanding history of racism and prejudice. An example of a source of stress regarding racism at the individual level would be the knowledge that as a Black American woman, one will undoubtedly face racism in one’s lifetime. Their own experiences, the experiences of friends and loved ones, and their knowledge of history converge toward an expectation of potential discrimination. In a study done by Nuru-Jeter et al. (2009), the authors conducted focus groups with Black American women living in California to ask them about their own experiences with racism. These may have happened to them directly or vicariously, meaning it happened to someone they know. Some women shared that they internally struggle with concern about potential experiences with

racism, to them or their children. Because of the history (and current state) of racism in the US, these women have internalized a concern for future events, causing stress and potential adverse health outcomes.

Many women in the study shared that they worry about their kids having to face racism. Naturally, this worry causes stress on the mothers that White American mothers do not have to cope with. One woman shared:

I'm stressed because now that my kids are getting older, the school-age ones, they go through it all the time...So everyday I have to deal with that, so it's stressful. I take that in internally. It's subtle, it's not out in the open like slavery days, it's like hidden, but you feel it still. So I feel like I feel it everyday...Because as adults it seems like I could overlook it a little bit and not think about it everyday. But you have kids coming home everyday, oh he called me a nigger or black. That affects you as a parent... I go through the hurt when they go through the hurt. (Nuru-Jeter et al., 2009, n.p.)

It is clear that, even if their child does not suffer an experience of being ostracized because of race, Black American mothers instinctively hold concerns about the possibility. Another woman in the study shared a painful memory as well:

I remember looking at my baby—he had to be about 2. I remember looking at him and saying, ‘Oh my God, what have I done [bringing him into the world]?’ And that's a sad, sad, sad feeling ...because your child is supposed to be the happiest thing that you have on this earth and I'm looking at him going, ‘What have I done?’ My child is going to have to go through this life being black. (Nuru-Jeter et al., 2009, n.p.)

Although no specific event happened to the child this woman is speaking of, she was certain that he will have to face racism at some point. Not only did she share her fear for him suffering from racism, but she believed it may have been better to not give birth to him at all.

These personal statements by Black American women give insight to some of the instilled fears shaped by racism that appear at the individual level. The ugly history of racism in the US influences Black Americans to prepare themselves for a life of discrimination. As stress is a natural response to these fears, the likelihood of adverse health outcomes, including infant mortality, increases.

**Relationship factors.** The relationship level, which includes an individual's social network may provide support to an individual when coping with stress from racism, but houses several sources of stress as well. Through the study done with focus groups, when asked about personal experiences with racism, many of the women in the focus group shared stories of their childhood, indicating that these experiences may have a larger, long-term impact. Most told memories of being ostracized by White neighbors or friends in some manner. One woman shared how she used to play with a White girl every day until her friend's parents decided they could not allow them to play together anymore because she was Black. Another woman who always had to be the "monster" during games because of the color of her skin. After being called a "nigger" during school, a woman remembers thinking "how a child that young could have that much hate? He didn't know anything about me. It just really stuck with me. I can still see his face" (Nuru-Jeter et al., 2009, n.p.). The stories continue, and although these memories may have occurred years before, their lasting effects can be understood when the women speak of the impacts.

Experiencing racism directly is damaging, but there is evidence to show that a vicarious experience may have just as much, if not more, lasting effects. Several studies have shown that witnessing another person experience racism may have larger impacts on a person's stress level and health than other manners of racism. In a study done by Dominguez et al. (2008), results showed that racism experienced vicariously (through the experience of another person) as a child was the only predictor that influenced birth weight independently of other factors. This suggests that experiencing racism as a child may have greater, long-term impacts on health than compared to racism experienced as an adult. It is known that experiencing high-stress situations as a child can cause physiological changes affecting long-term health, so when a child witnesses their parent suffering from discrimination, they feel their own security being threatened (Dominguez et al., 2008).

Within the family, parents may also attempt to teach or prepare children for future, potential occurrences of discrimination. While parents may believe they are empowering their children to better withstand racism, Dominguez et al. (2008), suggested that there may be negative consequences of parents educating and attempting to prepare their children for racism and inequality. This may indicate that these "preparations" unintentionally cause greater stress concerning racism, rather than being a source of comfort and assistance when coping with this stress.

These statistics and stories are several examples of the multitude of relationship level sources of racism. They include experiences of exclusion, name-calling, ostracization from friends and their families, and more. Whether discrimination and racism are experienced directly or vicariously, these encounters may have long-term impacts on health. Because these encounters are seen to occur from childhood through life, the magnitude of the health impact is extensive.

As the chronic stress from relationship level sources of racism continues, the adverse health outcomes, such as preterm birth and infant mortality, worsen.

**Community factors.** The community level is home to a broad collection of sociocultural factors shaped by racism. Here, there is evidence that Black Americans experience racism through the workplace, in their neighborhoods, and even in retail and healthcare settings. Although there is no direct evidence in the literature for the relationship between every one of these factors and birth outcomes, these factors do cause disproportionate stress among Black American women that their White counterparts do not experience. And, as previously described, that increased stress is definitively linked to birth outcomes.

One influencing factor within the community level of the SEM is residential redlining. Residential redlining is an “institutional practice in which banks and other financial institutions deny loans to communities and individuals based on race” (Mendez, Hogan, & Culhane, 2011, p. 103). This practice is not a new concept; in fact, the term became popular in the 1960s but has existed much longer. Residential redlining is a method of controlling the distribution of wealth throughout communities. By denying some applicants home loans for purchases in certain geographic areas, those applicants are forced to consider homeownership in neighborhoods and communities that they did not originally consider or desire. This practice is believed to both indirectly and directly impact health outcomes because of the disparities among community and neighborhood conditions. Redlined neighborhoods have poorer access to resources, including grocery stores, education, and healthcare providers, and are said to be stress-inducing (Mendez, Hogan, & Culhane, 2011).

In a study done by Mendez, Hogan, and Culhane (2011), data from the Home Mortgage Disclosure Act (HMDA) in Pennsylvania in 1999-2004 was used to determine the impacts of

residential redlining. Through the study, they determined that Black American applicants were more likely to be denied a loan, even when controlling for the applicant's gender, income, and loan amount (Mendez, Hogan, & Culhane, 2011). Black American women had a greater likelihood of living in redlined neighborhoods compared to any other group. Although the authors did not present a significant direct association between residential redlining and birth outcomes, they did find a relationship between residential segregation, a result of redlining, and birth outcomes. The authors suggest that because of the long-standing history of redlining and its existence as an institutional practice, it may be difficult to find the direct impact on pregnancy-related outcomes (Mendez, Hogan, & Culhane, 2011).

Women in the focus group study described previously (Nuru-Jeter et al., 2009) also shared their personal thoughts and experiences on racism at the community level in their neighborhoods. Redlining is associated with subpar access to grocery stores, schools, and other resources. Respondents in the focus group study were concerned about the lack of grocery stores and the surplus of liquor stores in their neighborhoods. This access issue impacts the foods that are readily available for the families to purchase and consume, possibly resulting in a less nutritious diet. Study respondents even found themselves generalizing schools based on the neighborhoods they are in: "The majority of African-Americans live in impoverished... neighborhoods, and ... I notice that those schools are really low quality in the impoverished neighborhoods, or the neighborhoods where there's people of color" (Nuru-Jeter et al., 2009). This impression may impact school choice as well. One mother, when speaking of her children shared:

I know when I'm looking for schools...I'm like... 'am I just thinking this school is good because it's White and White folks are sending their kids there? And am I thinking this

school is [just] okay because a lot of Black folks are there?’ And that's sad when you are a Black person and you have to fight against your own stuff. (Nuru-Jeter et al., 2009, n.p.)

Many of the women in the study expressed concerns with the quality of the schools in their neighborhoods. The issue extended within the school: women shared stories of them or their children “surprising” teachers when they were successful in school, as if they had not expected them to succeed (Nuru-Jeter et al., 2009). This study did not focus on the direct results of racism experienced in settings such as school and birth outcomes, but it is clear that these experiences have caused and continue to cause stress on Black American women.

There is also evidence to suggest that the workplaces of Black American women can also serve as an environment in which experiences of racism occur. In general, SES and education level is directly correlated with improved birth outcomes, meaning women and families with a higher level of education and/or a greater income experience lower rates of low birthweight and infant mortality. Yet, this is not the case for every race. Black American women with increased education actually experience higher rates of low birthweight and infant mortality (Rosenthal & Lobel, 2011). These women are likely working in environments with a largely white staff, creating greater discomfort and an increased potential for experiences of discrimination as these work settings are “underpopulated by people of color,” according to Rosenthal and Lobel (2011, n.p.). Statistics which compare median wealth and outcome by race demonstrate the separation. According to Williams, Priest, and Anderson (2016), the ratio for median income for Black Americans to White Americans was 0.59; in other words, Black Americans make 59 cents for every dollar that a White American makes. This statistic exhibits the disproportion of wealth and likely the disproportion of races in work settings in the US. It is suggested that a Black American

woman in this setting will experience discomfort and disconnect from her coworkers, resulting in a greater likelihood of perceived racism (Rosenthal & Lobel, 2011). In the study done by Nuru-Jeter et al. (2009), women shared that they felt like a quota regarding their workplaces, suffered racist comments from their coworkers, and felt as if they did not have the same support as their White counterparts for advancing their career.

The community level of the SEM houses many avenues of potential discrimination for Black Americans in the US. Based on the literature, workplaces, schools, and neighborhoods are environments that have the potential to cause disproportionate stress upon Black American women and influence the likelihood of adverse birth outcomes because of the stress based on their race.

**Societal factors.** Sociocultural factors of racism that are categorized into the societal level of the SEM occur in healthcare settings, schools, and other organizations. Because of a history of medical mistreatment from providers with Black American patients, a deep feeling of mistrust exists (Rosenthal & Lobel, 2011). Research shows that Black American patients do receive substandard medical care. If a white patient entered a hospital with chest pain, they would very likely receive a referral for a cardiac catheterization; on the other hand, Black American women are least likely to receive this referral for chest pain (Rosenthal & Lobel, 2011).

This discrimination extends towards expecting mothers. Because of an underlying stereotype that Black Americans do not have health insurance or rely on welfare, pregnant mothers have been denied treatment in hospitals around the country. If they have been admitted, Black American women express feelings of discomfort and that they are not welcomed or properly treated by their providers (Rosenthal & Lobel, 2011). In *Listening to Mothers III*



(2013), a survey done to report women's experience of pregnancy and labor, nearly 20% of Black American women shared that because of their race, they felt they received poor treatment in a hospital setting, while only 8% of White American mothers reported so. Many Black American women have felt as if they have not been given a role in making decisions with their physicians. Moreover, 55% report they had no choice in choosing their prenatal provider and 26% met their birth attendant for the first time during the delivery (Listening to Mothers III, 2013). On the other hand, only 17% of White mothers reported that their provider had been assigned to them and 18% had never met their birth attendant. Lastly, Black American women are more likely to receive group prenatal care, rather than individual. In Listening to Mothers III (2013), 30% of Black American women reported having at least one visit with other women. Almost half that, 16% of White American women reported group prenatal care. These examples demonstrate the lack of control over decisions that Black American women face during their pregnancies, resulting in further stress and less adequate medical care.

Regarding the birthing process, Black American women often report being coerced into using passive techniques for giving birth, including lying on their backs, using epidurals, receiving episiotomies, or delivering via an unnecessary cesarean section (Rosenthal & Lobel, 2011). The cascade of interventions describes the phenomenon that for each medical intervention a woman receives during labor and delivery, her chances of cesarean section increase. Cesarean sections, specifically those that are not medically necessary, are associated with negative birth outcomes such as wound infections, puerperal febrile morbidity (fever after birth), and issues with breastfeeding (Bodner, Wierrani, Grunberger, & Bodner-Adler, 2011). Ultimately, this results in greater risk of adverse health consequences, including infant mortality.

If a Black American woman cannot live in a safe neighborhood where she and her family have access to healthcare services and food, she likely will not feel she has an adequate environment for an infant. Furthermore, if she feels anxiety or mistrust with her healthcare provider, or feels she has no say in important decisions during her pregnancy and delivery, she may experience more stress both prior to and during pregnancy. These societal sources which are experienced disproportionately by Black American women are more sociocultural factors which potentially impact IMR.

The evidence is clear that experiencing racism, both before and/or during pregnancy, is a predictor of preterm birth and low birthweight infants. At the individual level, Black American women may internalize a fear that their or their children's lives will undoubtedly have experiences of discrimination. Occurrences of ostracization among friends or witnessing a family member suffer from discrimination at the relationship level are several other sociocultural risk factors that cause stress upon Black American women. The community level, including neighborhoods, schools, and workplaces, is also the home to many risk factors that White American women do not experience. Lastly, healthcare settings in the societal level are a large source of stress for expecting Black American women, as they are likely to receive subpar treatment compared to their White counterparts. It is clear that the sociocultural factors of this disparity are not solely made of socioeconomic status and education but of an institutionalized racism that presents itself in various levels of the SEM.

### **History of Intervention**

There is limited research on intervention programs for explicit relationships between racism and negative birth outcomes. Most studies tend to focus on solving issues as if socioeconomic status were the greatest contributor to the disparity. For example, the Genesee

County Racial and Ethnic Approaches to Community Health (REACH) program that has been practiced in Flint, Michigan is a community-based program that focuses on educating the community about barriers that prevent Black American women from improved birth outcomes. This program is based on three major themes: “fostering community mobilization, reducing racism, and enhancing the maternal-infant healthcare system” (Kruger, French-Turner, & Brownlee, 2013, n.p.). Through these themes they aim to educate about cultural competency and understanding. The program initiates windshield tours which take participants through neighborhoods in Flint to demonstrate the potential barriers women in these areas may experience when it comes to their health. Participants can see the shortage of grocery stores and healthcare clinics, as well as the presence of abandoned properties and seemingly unsafe neighborhoods. They are also better able to understand the difficulties the women experience regarding transportation to and from doctor visits.

Through these tours, participants are able to recognize why women of color may experience negative birth outcomes at much higher rates than White American women. This recognition helps to encourage improved interactions between healthcare providers and patients, which overall improves prenatal health and birth outcomes. Since the initiation of the program by the CDC in 1999, Genesee County has seen a reduction in infant mortality rates that is greater than surrounding counties (Kruger et al., 2013). Although this cannot be solely attributed to the program, this is reason to believe its initiatives have been effective. However, there is the possibility that this type of intervention through a windshield tour instills an “us vs. them” mindset and further deepens the separation between races in the US.

Another intervention that may impact IMRs is participation in a Women, Infants, and Children (WIC) program. Khanani, Elam, Hearn, Jones, and Maseru (2010), studied Hamilton

County, Ohio to determine whether participation in a WIC program reduced the likelihood of infant mortality. WIC programs began in 1972 with a pilot program aiming to better nutrition of at-risk families. Two years later, it was permanently established. These programs provide a variety of resources for women and their families, including nutrition education, supplemental food, and referrals for women at risk, specifically those in low-incomes. The program has reached millions of women over the last 40 years. In 2008, almost 9 million women and their children took part in the program (Khanani et al., 2010).

This study focused on Hamilton County, where high rates of infant mortality exist. In 2008, there were nearly 22,000 participants in the WIC program in this county. Between 2003 and 2007, the infant mortality rate for White Americans was 7.0 per 1,000 live births, that of Black Americans was 19.3, and the county rate was 11. At this time, the national infant mortality rate was 6.8. The research focused on participation in WIC programs and infant mortality rates. After evaluating participants and the birth outcomes, results showed that Black American women who participated in the program had a decreased risk of infant death than those not in the program (Khanani et al., 2010). Oddly, the results did not show a difference in likelihood of infant death between White American women. They also found that the likelihood of preterm birth decreased with participation for Black American women, as well. Therefore, it was concluded that WIC programs may have a positive impact on birth outcomes for Black American women in Hamilton County, Ohio. These results could be applied to programs around the country.

Although the history of intervention regarding disparities in IMR is limited, the existing programs can be used to develop more effective programs in the future. While the REACH program may have improved IMR, it may have unintentionally instilled a greater separation

between those taking the tours and those in the neighborhoods. It could be argued that this could be contributing to the root of the problem. On the other hand, WIC participation can improve birth outcomes but leaves the solution in the hands of the expecting mothers, rather than the environment they lived in. Clearly, intervention must be practiced at many different levels to improve the experiences of Black American women both during and after pregnancy that impact birth outcomes.

### CHAPTER III

#### Summary and Conclusions

The sociocultural risk factors which contribute to higher rates of infant mortality among Black American women are found across all levels of the SEM, demonstrating the complexity of the disparity. At the individual level, Black American women suffer from the preconceived knowledge that they will surely face some type of racism or discrimination in her lifetime. This extends towards concern and anxiety that their children will experience the same and they cannot control it. In the study done by Nuru-Jeter et al. (2009), women shared their personal concerns about their children or themselves, demonstrating the deeply instilled source of stress. Regardless of whether an occurrence of discrimination has actually occurred to that woman or her child, there is an anxiety of potential racism which causes significant stress.

At the relationship level, Black American women are influenced by chronic stressors including past experiences of ostracization, witnessing a friend or family member face discrimination based on race, or even being “prepared” for prejudice by their parents. In fact, research by Dominguez et al. (2008), supported the idea that vicarious racism has an even greater impact on long-term health outcomes. Each of these factors is not generally experienced by White American women as they do not themselves typically face discrimination based on their race, thus resulting in a disparity of chronic stressors.

Furthermore, racial redlining and the disproportionate denial of home loans to Black Americans is an example of institutionalized racism at the community level. By denying a Black American a loan to purchase a home in his or her desired neighborhood, the individual is then limited to specific neighborhoods, generally those with poorer access to necessary resources including grocery stores, healthcare providers, and adequate education systems. Not only are

these communities consistently segregated, but the inadequate access to necessities also causes stress upon its residents. Research also shows that workplaces are a source of chronic stress for Black American women, regardless of their education or income level. Because these factors potentially cause chronic stress, they may be influencing infant mortality rates.

Lastly, the societal level encompasses a significant source of chronic stress for Black American women: the healthcare setting. Because the US has a history of unfair treatment to Black Americans in medical settings, a mistrust exists between Black Americans and their healthcare providers. Not only does the idea of this mistreatment cause stress, but the subpar medical care also impacts health outcomes, including infant mortality. Ultimately, each of these risk factors contributes to a greater likelihood of chronic stress among Black American women when compared to their White counterparts.

Because these factors are disproportionately experienced by Black American women, they cause greater chronic stress than White American women would face. As mentioned before, chronic stress, or allostatic load, is a maladaptive process. As an individual continues to experience stress, the body overcompensates for physiological processes and the result is a prolonged secretion of stress hormones, such as cortisol. The consequences of this extend to long-term and adverse health outcomes, including malfunctions in the cardiovascular and immune systems. Overall, these dysregulations have serious impacts on the development of an infant, thus increasing the likelihood of infant mortality.

The history of health promotion interventions for this national disparity is limited. The Genesee County REACH program is supported by the results which report a decrease in infant mortalities. However, it is difficult to conclude whether it is a best practice program. It is possible it may further instill racial stereotypes and a separation between the Black American

and White American populations of the US. Regarding the WIC programs implemented in Ohio, improved outcomes can be seen in the women who are able to take advantage of the opportunity, but this program cannot serve every Black American woman nationwide. These programs are limited in their outcomes and do not resolve the root of the issue.

Creating a potential solution becomes more complicated as the extent and complexity of the disparity is revealed; because the sociocultural risk factors and sources of chronic stress are apparent at every level of the SEM, one program will not solve the issue. Racism is defined as “a multidimensional construct that involves the oppression, domination, and denigration of individuals by other individuals and by social institutions on the basis of skin color and/or membership in a particular ethnic group” (Dominguez et al., 2008, p. 195). The multidimensional nature and continued denial of the existence of institutionalized racism perpetuates the disparity and makes a solution seem out of reach. Without admitting the presence of racism, there is no future without this racial gap. Our society has led and encouraged many to believe that racism, oppression, and discrimination are things of the past; I, as a White American, spent much of my life believing that unequal treatment at the societal level ended with the dissolution of Jim Crow laws. I understood that white supremacists who made derogatory comments and acted out of hate existed, but I did not understand the ways in which our society supports the ostracization of Black Americans. Because of this, it is apparent that the unwillingness or ignorance to believe that racism exists in the US further instills these disparities that cause a greater likelihood of infant mortality among Black Americans.

Although Jim Crow laws have technically ended, prejudice and ignorance continues and as a result, prolongs disparities. White privilege, an extremely controversial topic, does not have a clear, agreed-upon definition but is a necessary concept to discuss regarding these disparities.



So, it is important to understand what this privilege entails. Examples found in media help us understand the unwillingness of many White Americans to believe prejudice still exists. To begin, the recent backlash to the Black Lives Matter movement is a prime example. Before this movement, there was no All Lives Matter campaign; this was only created as a direct result of BLM. This displays an insecurity: people believed that Black Americans did not need an entire campaign to themselves because we *all* matter. Another example is when we hear of a White American sharing the idea that they do not see color or they believe they are not racist or biased because they do not define someone based on the color of their skin; although it may be true that they personally do not judge others based on race, it is a privilege not to notice a difference in skin color. As White Americans, we are not defined by our race in the ways that society has defined Black Americans. By refusing to acknowledge or being unaware of the prejudices that exist within ourselves and our society, we are actively perpetuating the factors that influence the infant mortality disparity.

The disparity is not something that can be fixed by a change in prenatal or lifetime health practices of Black American women; the issue is not in the individual health practices, but the society in which they must survive. As a society, there is vast room for improvement regarding prejudices and discrimination in health practices, as well as many of the other aspects of our culture. In no way is this thesis meant to generalize either race: Black or White American. Each individual may function differently, but as long as we act under a society shaped by institutionalized racism, we cannot wipe our hands clean of these inequalities. As health educators, it is critically important to take the time to reflect and self-evaluate upon one's own prejudices. By acknowledging that one may have preconceived notions based on race, they can become more conscious of them and make a serious effort to not act based on those prejudices.

It is possible that a variety of interventions implemented at each level of the SEM could prove to be part of the solution for this disparity. Programs that include the education and support similar to what WIC offers, as well as fosters a collaboration between providers, patients, and communities could have the greatest impact. It is incredibly important that these programs focus on bringing populations together, regardless of race, rather than further instilling the existence of differences and a separation. Each community around the country will also likely need their own individualized programs based on the depth, prevalence, and appearance of the existing prejudices. Because of the vastness of this disparity and its need for a multitude of intervention tactics, it is not simple to describe exactly which programs would solve the issue. Instead, an initiative to create and implement interventions that fit each community's specific needs could serve as the greatest concrete tool against this disparity.

An individual program will not resolve this health disparity among races in the US, but an effort made by the people, including health educators, to reflect where they stand and be willing to admit that they may hold prejudice. Only by acknowledging the existence of these prejudices, both within ourselves and in our society, can we truly be prepared to create and implement health promotion programs and become individuals who can help foster a society that is truly equal. Without this acknowledgement within health educators themselves, health promotion efforts will not be able to reach their full impact. Although discrimination and racism runs much deeper and impacts so much more than infant mortality rates, this indicator helps us evaluate the progress of our nation. When we are able to say that every infant, regardless of race, has the same access to a successful and healthy life, we will know we have achieved equality.

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