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Pregnant Black Bodies in Peril: A Multi-Method Analysis of Obstetric Outcomes and Gestational Experiences

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PREGNANT BLACK BODIES IN PERIL: A MULTI-METHOD ANALYSIS OF OBSTETRIC OUTCOMES AND GESTATIONAL EXPERIENCES

A Dissertation

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by
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For mommy, granny, and papa.
My everything.

If Black women were free, it would mean that everyone else would have to be free since our freedom would necessitate the destruction of all the systems of oppression.

— Combahee River Collective Statement

Acknowledgements

I wrote many sections of my dissertation in isolation. But I was never alone. I was fortunate to have a host of family, friends, and colleagues who provided unquantifiable support throughout this journey.

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those words were my lighthouse. Whatever I needed, whenever I needed it, you provided. Your sacrifices made my dreams possible. From the bottom of my heart, thank you mommy. We did it!

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Abstract

My multi-method three-paper dissertation provides a better understanding of the relationship between maternal racialized identity, obstetric outcomes, and gestational experiences. Using birth certificate data from the 2016 U.S. National Vital Statistics System and binary logistic regression models, in the first paper I explore heterogeneity in severe maternal morbidity (SMM) by maternal race, maternal education, and maternal age. To complement the first paper, in the second paper I allow 35 Black and White women/birthing people to describe pregnancy, birth, and early motherhood in their own words. I situate the Covid-19 pandemic as a unique cultural backdrop in this qualitative paper to explore how racial self-knowledge shaped patient-provider interactions. Because I exclude women who had a pregnancy loss from the qualitative paper, for the third paper I focus on the relationship between frequency of pregnancy loss and self-rated health. I use linear regression and panel data from the National Longitudinal Survey of Youth (1997-2019) to investigate how pregnancy loss frequency impacts health, how the effect of pregnancy loss on health varies between Black and White women, and whether social context explains the difference in the pregnancy loss-health relationship for Black and White women. Collectively, the three papers in my dissertation make several notable contributions. Both methodologically and theoretically innovative, my dissertation is unique for the ways I: 1) Use a reproductive life course perspective to study pregnancy and birth; 2) Expose new forms of reproductive oppression in pregnant peoples' experiences of risk, racial bias, and pregnancy loss; and 3) Center social policy initiatives that address persistent reproductive inequities. Motivated by a reproductive justice framework, my dissertation is a response to the health inequities plaguing Black mothers and a call to action to social scientists and medical experts who must address the harmful implications of racism.

Chapter 1. Introduction

Frentorish "Tori" Bowie, a Black woman, spent her adolescence and emerging adulthood on the track. Native to Sand Hill, Mississippi – a small town with no stoplights – Bowie discovered her love for track and field events after joining her Pisgah High School team. The five-foot-nine collegiate sprinter and long jumper became a three-time All-American at the University of Southern Mississippi. In 2012 she purchased a one-way ticket to California. Her destination – the Olympic Training Center (Chappell 2023; Da Silva 2023; Lynch and Riess 2023; WR Team 2018).

Four years later Bowie entered a raucous 2016 Olympic Games stadium in Rio de Janeiro, Brazil, sporting bright orange shoelaces and her team USA uniform. Purple baton in hand, arms swinging like pendulums by her side, Bowie ran the anchor-leg of the 4x100-meter women's relay. Moments after crossing the finish line she stood victorious, smiling in her neon pink headband, alongside Alyson Felix and her other teammates (Lynch and Riess 2023; NBC Universal 2024).

On May 2, 2023, while editing the second chapter of this dissertation, I discovered the shocking news of Tori's untimely death. Once hailed 'The Fastest Woman in the World,' (Chappell 2023), local sheriffs found the 32-year-old, three-time Olympic gold medalist alone in her home at eight-months pregnant. The autopsy report concluded her death was likely spurred by obstetric complications. Over the course of that summer, as I scrolled through social media, I saw Bowie's name surface in local and national media. In life Bowie was celebrated for her athletic prowess. In death she was a reminder of the peril facing Black women amid pregnancy, labor, and birth (Chappell 2023; Da Silva 2023; Lynch and Riess 2023).

In many ways, my dissertation is a paradigmatic account of the obvious neglect for Black mothers. The gestational journey should be a joyous time imbued with blissful memories. But in the United States the expected merriment of pregnancy is enmeshed in, and obscured by, racism, sexism, and other forms of oppression (Gee and Ford 2011; Krieger 2020; Weber et al. 2011; Williams, Lawrence, and Davis 2019b). The statistics and narratives housed within this dissertation draw attention to these structural forces, which repeatedly render Black maternal life as invisible and disposable. At nearly three times the rate of White[1] women (MacDorman et al., 2017, 2018) Black women repeatedly die from pregnancy complications directly tied to individual prejudice and institutional tyranny. But if reproductive rights are truly human rights, then Black birthing people[2] and other Women of Color should experience pregnancy and motherhood liberated from the confines of inequity. To understand and challenge the grievous health inequities plaguing Black mothers, my three-paper dissertation examines how education and age differentially protect Black and White mothers from severe maternal morbidity, how racial self-awareness impacted Black and White pregnant people during the pandemic, and how the effect of pregnancy loss on health varies by maternal race.

Sociological perspectives can elucidate the processes underlying these health topics. As guiding frameworks for the entire dissertation project I draw upon the stress process model (Pearlin et al. 1981), Black feminist thought (Collins, 2000), intersectionality (Collins, 2000, 2015; Crenshaw, 1991), and reproductive justice (Ross and Solinger, 2017). I integrate additional

[1] Because White is a socially constructed category that provides specific benefits I capitalize this term and related language (i.e. Whiteness) in my dissertation (Ewing 2020; Perry 2022).

[2] Throughout my dissertation I use the terms woman/women, mothers, birthing people, and pregnant people. Following Ross and Solinger (2017) I acknowledge the "limits of traditional, biologically based binary definitions of gender" (p.6). When discussing empirical research, I adhere to the terms used in the cited literature but whenever possible I incorporate inclusive language to reflect diversity in reproductive experiences and capabilities.

constructs into each chapter but used these four critical frameworks to guide my research questions and analysis. I detail the central elements of the guiding perspectives below.

The Stress Process Model

The stress process framework is a psychosocial lens commonly used by social scientists to explore the relationship between stressors and mental health. Early stress research began with Holmes and Rahe (1967). After studying military medical records, these psychiatrists made two hypotheses. First, significant life events required patients to make behavioral modifications. Second, if patients experienced too many events in a short time frame, they could exhaust their coping ability. Holmes and Rahe (1967) concluded patients with inadequate coping skills were more susceptible to health issues. To quantify coping skills, they developed the Social Readjustment Rating Scale where higher scores pertained to higher adjustments. Death of a spouse received a 100 (the highest readjustment score) and minor law violations received an 11 (the lowest readjustment score). Pregnancy appeared mid-scale with a score of 40.

Although groundbreaking, early stress process literature perceived stressors as discrete life events rather than "persistent or repeated demands" (Thoits 2010, p.42). Wheaton's (1994) 'stress universe' addressed the limited scope of this nascent stress research. His stress universe recognized chronic stressors, traumas, and nonevents as a matrix of stressors situated along a discreteness continuum (see Figure 1.1). Chronic stressors, for instance, appear at one end of the continuum and pertain to on-going hardships. Examples of chronic stressors might include lingering health complications and unyielding economic challenges (Wheaton 1994; Williams and Sternthal 2010). As I detail in all three papers, repeated exposure to racial discrimination is a chronic stressor with deleterious health impacts on Black women (Giurgescu et al. 2017; Perry, Harp, and Oser 2013; Rosenthal and Lobel 2020). Sudden traumas are usually the most discrete

stressor. Associated with enormous severity, sudden traumas include global health emergencies, terrorist attacks, and man-made technical or natural disasters (Feriante and Sharma 2024; Keating et al. 2020). I introduce the Covid-19 pandemic as a sudden trauma in the second paper. Nonevents land in the middle of the continuum. These stressors emerge when an anticipated event doesn't happen. For example, women who envisioned the start or expansion of a family might report shock and "stolen dreams" (Mcgee, PettyJohn, and Gallus 2018, p.523) after pregnancy loss. I focus on the effect of pregnancy loss on self-rated health in the third empirical paper.

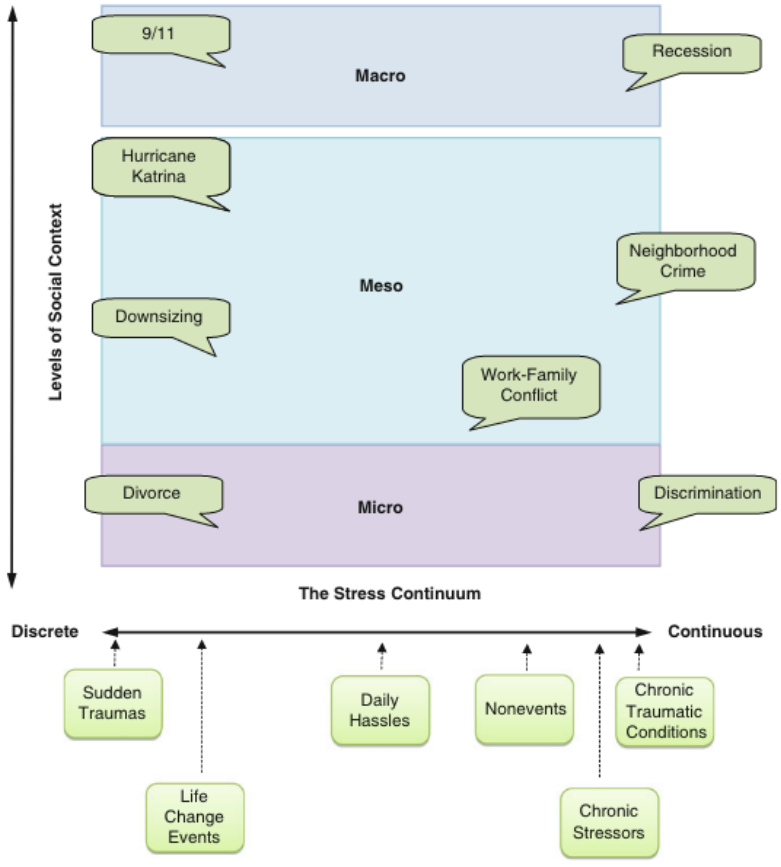

Figure 1.1. Two Way Classification of Stressors
Source: Adapted from Wheaton, B., Young, M., Montazer, S., & Stuart-Lahman, K. (2013). Social Stress in the Twenty-First Century. In C. S. Aneshensel, J. C. Phelan, & A. Bierman (Eds.), Handbook of the Sociology of Mental Health (p. 305). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-007-4276-5

According to Wheaton's (1994) stress universe, stressors exist, concurrently, within the discreteness continuum and two other dimensions: the macro-micro dimension and a life-course dimension. In the macro-micro dimension stressors are categorized by level of impact. For example, the Covid-19 pandemic might be conceptualized as a discrete, macro-level trauma due to its widespread national impact. Conversely, racial discrimination is considered a chronic stressor on the discrete continuum but a chronic, micro-stressor in the two-dimensional space. The life-course dimension (discussed more in the third paper) employs a similar approach. Within this dimension stressors simultaneously exist along the discrete continuum and at specific moments in the life span. Although the precise placement of stressors can vary, collectively, these co-existing spaces emphasize the complex, multifaceted nature of stressors (Thoits 2010; Wheaton 1994).

Stress and Social Location

Sociological research on the stress universe also describes how social location shapes the perception of stressors. According to Thoits (2010) and Turner, Wheaton, and Lloyd (1995), gender, social class, and racialized identity are important social characteristics for contextualizing stressors. Put another way, Pearlin (1999) emphasized, "People's standing in the stratified orders of social and economic class, gender, race, and ethnicity have the potential to pervade the structure of their daily existence . . . shaping the contexts of people's lives, the stressors to which they are exposed, and the moderating resources they possess" (p. 398–399).

For African Americans, specifically Black women, persistent exposure to gendered and systemic racism can exacerbate the psychological toil of other stressors, leading to adverse health outcomes (Clark et al. 1999; Perry, Harp, and Oser 2013; Thoits 2010; Williams et al. 1997, 2019). In the second paper I categorize the Covid-19 pandemic as a macro-stressor which

impacted pregnant people. During the global health crisis, obstetric practitioners cancelled in-person prenatal appointments. Hospitals created isolating experiences for pregnant people by restricting access to social support during birth (Javaid et al. 2021). These disturbances contributed to adverse health outcomes for swaths of pregnant individuals and their families. The increased uncertainty, stress, and anxiety among this unique cohort is widely cited (Ahlers-Schmidt et al., 2020; DeYoung and Mangum, 2021; Javaid et al., 2021; Moyer et al., 2020). However, since anti-Blackness is welded into the U.S. medical industrial complex (Roberts 2012, 2017; Washington 2006), pandemic-related disruptions and accompanying emotional hardships, were arguably much worse for Black pregnant people.

Given the well-documented relationship between stressors, racism, and health (Feagin and Bennefield 2014; Williams and Williams-Morris 2000), I integrate critical race perspectives throughout my dissertation to complement the stress process model. Critical race theory (CRT) makes four claims about race and racism in the United States: 1) Individuals and groups are racialized and thus, racialized identity is a social rather than biological characteristic; 2) People racialized as White are placed at the top of the racial hierarchy; 3) Racism is a normal, common experience for non-White individuals; and 4) Non-White people have distinct experiences tethered to racism (Delgado and Stefancic 2017; Feagin 2006; Omi and Winant 2015). The 'normalcy' of racism can also make it challenging for White people to perceive racial advantages and to accurately label Whiteness (Gallagher 2018). Commonly referred to as White privilege these 'invisible' qualities confer individual and systemic benefits. In sum, systemic racism disproportionality benefits groups racialized as White, deprives individuals historically categorized as non-White, and permeates every "material, social, and ideological" (Feagin 2006,

p.2) construct across the U.S. landscape (Feagin and Bennefield 2014; Phelan and Link 2015; Williams and Sternthal 2010).

Historicizing Black Feminist Thought

Despite CRT's roots in legal studies, sociological frameworks such as Black feminist thought (BFT) relate to, and extend, many aspects undergirding this critical perspective. In response to consistent efforts to subjugate Black women in the U.S., Black feminist thought emerged as a specific form of "social thought designed to oppose oppression" (Collins 2000, p.9). The "intellectual work" (Collins 2000, p.16) of Maria Stewart, Sojourner Truth, Anna Julia Cooper, Ida Wells-Barnett, and Zora Neale Hurston contributed to this unique standpoint long before Black feminist perspectives entered mainstream discourse and the academy. The mid to late 1900s were crucial decades for the dissemination of Black feminist perspectives. For example, in the 1960s and 1970s, second wave feminism and the Civil Rights movements were in full force. Through grassroots organizing and social action from community mobilizers, the co-occurrence of these social movements contributed to "hammer[ing] out a collective feminist knowledge project" (Collins 2015, p.8). Particularly important to the spread of Black feminism was the Combahee River Collective's 1982 publication of "A Black Feminist Statement" (Collins 2015; Taylor 2017). This statement promoted the idea that viewing oppression solely through a race-only or sex-only perspective was incomplete and failed to holistically capture the lived experiences of Black women.

Central Tenets of Black Feminist Thought

In 1990, Patricia Hill Collins published her groundbreaking text, *Black Feminist Thought*, where she poignantly defined and detailed the thematic elements of this sociological perspective. In this text she highlights the unique standpoint of Black women, perspectives typically

obfuscated in public discourse and academic spaces due to the dominance of Eurocentricity and patriarchy. Collins details five central tenets of Black feminist thought. First, in the U.S., the matrix of domination refers to the "structural, disciplinary, hegemonic, and interpersonal domains of power [which] reappear across quite different forms of oppression" (Collins 2000, p.18), and can be comprised of class, race, gender, sexuality, and nationality. Collectively, these social locations frame Black women's experiences with oppression. However, Black women continue to produce intellectual work despite attempts to suppress the voices of this community. In this way, the second tenet of BFT is Black women's contribution to a "dialectic of oppression and activism" (Collins 2000, p.3). Next, Black women have a shared identity, given their race and gender, but may find themselves at various locations in the social hierarchy based on other characteristics, such as sexuality, class, and ethnicity. The fourth tenet acknowledges this variation by simultaneously emphasizing commonalities across these distinctions. This "same-difference" (Luna 2016, p.776) is paramount to fostering awareness of hegemony and engendering resistance. Finally, the last tenet recognizes Black feminist thought as a critical type of sociological theory. Critical theory is concerned with knowledge construction, particularly counter-hegemonic knowledge (Hesse-Biber, 2017).

A fundamental component of my analysis in the second paper pertains to Black women's experiences throughout pregnancy, birth, and postpartum. I purposefully privilege the voices of Black women as distinct contributors to knowledge production. Even though I view Black women as a collective, in the first paper I also emphasize the third tenet of BFT. By analyzing within-racial-group differences I portray Black mothers as heterogenous with significant differences across education and age. Also, I intentionally cite scholarship from Black women and other Women of Color throughout my dissertation. The intellectual contributions of Black

women, in the form of lived experiences and publications in peer-reviewed journals, work in tandem to expand Black feminist thought.

Intersectionality

Although the theoretical seeds for intersectionality were planted in BFT and earlier studies on race, class, and gender (Collins, 2015), modern narratives generally point to Kimberlé Crenshaw's (1991), "Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color" as the framework's origin point. Broadly defined, intersectionality pertains to "forms of intersecting oppressions" (Collins 2000, p.18). More specifically, intersectionality is a malleable intellectual paradigm, shaped by existing social inequities that recognize race, class, nationality, nativity, age, ability, sexuality, ethnicity, and other social characteristics as reinforcing axis of oppression (Collins, 2000, 2015; Crenshaw, 1991).

Along with the conceptualization of intersectionality as a field of study, Collins (2015) also emphasizes intersectionality as critical praxis and an analytical tool. As critical praxis, intersectionality focuses on conducting social justice and advocacy work to combat injustice and dismantle oppressive social forces. As an analytic strategy, intersectionality can function as a lens for viewing social problems and a framework for examining institutional power that extends beyond race, gender, and class. An intersectional lens is a useful conceptual frame given that my research is interested in interrogating how institutional and social forces, such as the medical-industrial complex and obstetric racism, shape Black women's narratives and health outcomes.

Reproductive Justice

Finally, reproductive justice (RJ), the framework and movement, emerged in 1994 in response to the Clinton administration's health care improvement plan, which neglected to consider reproductive care. To garner attention from policy makers, Women of African Descent

for Reproductive Justice (later renamed Black Women on Health Care Reform), drafted a statement that addressed inadequacies of the proposed health care plan. In the following years, the original conceptualization of reproductive justice, initially proposed by the informal coalition of Black women in 1994, expanded to include other Women of Color. Notably, a 2003 national conference, hosted by SisterSong Women of Color Reproductive Health Collective, included a plenary session on reproductive justice (Ross and Solinger 2017). The conference, according to Ross and Solinger (2017), catapulted reproductive justice into the heart of reproductive advocacy. Two years later, Asian Communities for Reproductive Justice (later known as Forward Together) published 'A New Vision for Reproductive Justice,' a "groundbreaking essay" (Ross and Solinger, 2017, p.68) that detailed three interconnected concepts - reproductive health, reproductive rights, and reproductive justice.

Reproductive health focuses on the dissemination of reproductive services. This concept aims to expand preventative care by addressing reduced access to resources and empirical knowledge. Reproductive rights emphasize legal protection for reproductive care and work to establish legal rights for pregnant people. This includes but is not limited to access to abortion services. Finally reproductive justice extends beyond legal protections and access to care given that this is a "movement-building and organizing framework" that emphasizes "reproductive oppression" (Ross and Solinger, 2017, p.69) and accounts for myriad cultural, social, and environmental factors. Collectively these three frameworks - reproductive health, reproductive rights, and reproductive justice - make up the "matrix of reproductive activism" (Ross and Solinger, 2017, p.69).

Reproductive justice is specifically comprised of three basic principles: 1) Birthing people should have the right to not bear a child; 2) Birthing people should have the right to have

a child; and 3) Birthing people should have the right to parent their children in a healthy and safe way. Alongside these grounding principles, RJ also advocates for sexual autonomy and gender freedom for all. For this reason, a human rights perspective is woven into the RJ framework, as human rights advocacy illuminates underlying prejudice related to numerous social characteristics and holds the government responsible for affording individual rights (Ross and Solinger, 2017).

Within my dissertation I use storytelling to highlight Black women's collective power and to promote reproductive justice. Also, I introduce Ancient Song Doula and the International Center for Traditional Childbirth (2022) and The Birthing Project (2023) (see conclusion) as nonprofit organizations advancing reproductive and social justice initiatives. Narratives and collective action are core components of reproductive justice praxis and are just a few ways that this dissertation incorporates an RJ framework.

Overview of Dissertation Chapters

Grounded in the aforementioned perspectives, my dissertation contains three distinct, but interrelated, papers. Below I describe the specific research questions and analytic strategies of each paper.

In the first paper (chapter two) I examine if education and age are differentially protective against severe maternal morbidity (SMM) among Black and White mothers and within each racial group. Approximately 50-60,000 U.S. women are impacted by SMM each year, and like maternal mortality, rates are increasing (Declercq and Zephyrin 2020, 2021). But the protective effects of education and younger age might not extend to Black and White mothers equally. Higher education generally predicts better health outcomes, but given the prevalent racism within our social world, it is unclear if educational attainment engenders similar benefits for

Black and White mothers (Williams 1999; Williams and Collins 1995). Further, advanced maternal age is associated with higher rates of SMM, but the negative relationship between age and health may be more potent for Black birthing people as the chronic stress of living within a race-conscious environment likely leads to earlier health deterioration (Geronimus 1992, 2023). Using birth certificate data from the 2016 U.S. National Vital Statistics System and binary logistic regression models, in the first paper my analysis answers several research questions. First, what is the effect of racism (measured by maternal racialized identity as a proxy) on the odds of SMM? Next, to what extent are education and age protective against SMM for Black and for White women? Third, if there is a racial gap in SMM odds, how does this vary by maternal education and/or by maternal age? By addressing differences across significant social determinants of health, my paper contributes to timely conversations in demographic and health disparities scholarship.

In the second paper (chapter three) I center the experiences of Black and White pregnant women, living in the United States, during the recent global health emergency. The implications of pandemic-related disruptions were arguably the most challenging for pregnant Black women given the egregious history of U.S. obstetrics and gynecology and contemporary racial bias in healthcare (Chambers 2023; Cooper Owens 2018; McLemore 2018). To garner a better understanding of gestational experiences, obstetric racism, and White privilege, in the second paper I ask to what extent did social position, specifically racialized identity, shape Black and White pregnant women's perceptions of obstetric care and interactions with obstetric providers during the first two years of the Covid-19 pandemic? For this study, I use semi-structured interviews with 35 women. This methodological approach complements the quantitative chapters by allowing participants to describe pregnancy and early motherhood in their own words. My

study presents novel findings on pregnancy during the Covid-19 pandemic and contributes to the burgeoning literature on this public health crisis.

Given the potential psychological ramifications of pregnancy loss, I intentionally excluded women who experienced this common life-event from the second paper. In the third paper (chapter four) I shift attention to this stressful reproductive outcome, detailing how pregnancy loss impacts self-rated health. Most pregnancy loss literature explores health following one loss with a paucity of scholarship on health after multiple losses (Campbell-Jackson and Horsch 2014; Farren et al. 2016; Gerber-Epstein, Leichtentritt, and Benyamini 2009). To extend existing knowledge on stressors, the reproductive life course, and well-being, in this paper I first ask how pregnancy loss frequency shapes health. Next, because the meaning and frequency of pregnancy loss may differ by social location, I ask how the effect of pregnancy loss on health varies between Black and White women. Third, I examine if, and to what extent, social context (i.e., relationship status, childhood socioeconomic status, and current education) explains the effect of pregnancy loss for Black and White women. In this paper, I advance and refine our current understandings of the stress process (Pearlin et al. 1981) and reproductive careers frameworks (Johnson et al. 2018, p.642) by showing how the health implications of pregnancy loss are shaped by multiple factors.

Taken together, my dissertation addresses maternal and obstetric health disparities across social location, namely maternal race. Although local and federal policies, such as the Black Maternal Health Momnibus Act (2021) have taken considerable measures to equip medical providers with anti-racism training, the staggering rates of severe maternal morbidity, racial discrimination in healthcare settings, and pregnancy loss among Black women persist. Black pregnant people are still suffering from inequities rooted in prejudice and structural oppression.

My dissertation responds to these human rights issues by advancing health equity scholarship, broadening knowledge on relationships between gestational outcomes and oppressive social forces, and enhancing our understanding of underlying injustices in obstetric medicine.

Chapter 2. Racial Inequities in Maternal Health: Black-White Differences in Severe Maternal Morbidity

Every day, Black women die because the system denies our humanity
— Congresswoman Cori Bush

The U.S. Maternal Health Crisis

The U.S. is a high resource setting with notable twentieth-century advancements in nutrition, disease monitoring, and clinical medicine (Douthard et al. 2021). Yet, the U.S. maternal mortality rate ranks higher than all other industrialized nations (Kassebaum et al. 2016) and until recently the severity of this social problem was downplayed in public consciousness. Policymakers and national thought leaders finally made the fight against maternal death a "site of cultural interest" (Nash 2021, p.4) after Linda Villarosa's *New York Times* article avowed Black maternal and infant health a "life-or-death crisis" (2018, title).

To address, and mitigate, U.S. maternal mortality social scientists increasingly look to maternal morbidity. Broadly categorized, maternal morbidity encompasses three dimensions. In ascending order of gravity, the three aspects of this 'umbrella' term include: maternal morbidity (a health condition associated with pregnancy or childbearing that has unexpected, adverse impacts on maternal welfare), severe maternal morbidity (unanticipated consequences of childbearing with acute and chronic implications for maternal well-being), and near-miss maternal morbidity (a nearly fatal event that occurs during pregnancy, labor, birth, or within 42 days postpartum) (Declercq and Zephyrin 2021).

In this paper I give attention to severe maternal morbidity (SMM). Notably, SMM and near-miss maternal morbidity are often used interchangeably in the literature with both outcomes referencing conditions in which the birthing person nearly escaped death. I situate severe

maternal morbidity alongside uncomplicated pregnancies, maternal morbidity, and maternal mortality in Figure 2.1., for clarity and context.

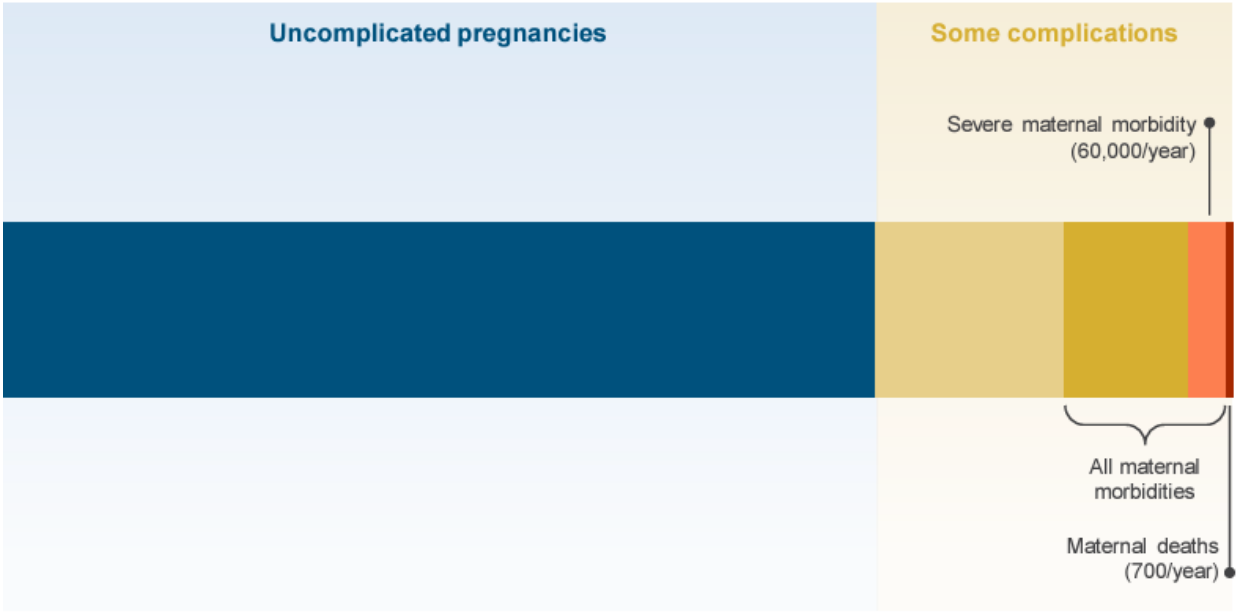

Figure 2.1. Pregnancy and Severe Maternal Morbidity in the United States
Source: Declercq, E., & Zephyrin, L. (2021). Severe Maternal Morbidity in the United States: A Primer. Commonwealth Fund. https://doi.org/10.26099/ta1q-mw24

From the nearly 3.5 million annual births in the U.S., most birthing people experience uncomplicated pregnancies. From this, approximately 50-60,000 people face severe maternal morbidity, fewer have near-miss morbidity complications, and an estimated 700 die (Declercq and Zephyrin 2021). Egregious, but rare, the scarcity of maternal death makes studying SMM more accessible.

To classify SMM, the Centers for Disease Control and Prevention (CDC) use hospital records and ICD (International Classification of Disease) codes. In 2012, the CDC identified 25 SMM indicators. Revising this list in October 2015, the current list includes 21 life-threatening procedures and conditions (Centers for Disease Control and Prevention 2023c). Three indicators – blood transfusion, unplanned hysterectomy, and eclampsia – are included in the composite

measure in this analysis. Transfusions, or the process of transferring blood to a birthing person during pregnancy, labor/birth, or postpartum due to extensive hemorrhaging, account for most SMM cases (Declercq and Zephyrin 2021; Fingar et al. 2018). In 2015, 121 births per 100,000 involved blood transfusion (Declercq and Zephyrin 2021; Fingar et al. 2018). Considered a "major surgical venture" and the "most dramatic operation in modern obstetrics" (Machado 2011, p.358) an emergency or unplanned hysterectomy occurs less often than transfusions but more frequently than eclampsia. An estimated 11 birthing people per 100,000 received an unplanned hysterectomy in 2015 (Declercq and Zephyrin 2021; Fingar et al. 2018). Often stemming from, but more severe than preeclampsia, eclampsia involves seizures or coma (US Department of Health and Human Services 2017) and occurred in 3.1 births per 100,000 in 2015 (Declercq and Zephyrin 2021; Fingar et al. 2018). In sum, knowing more about these indicators and SMM can help medical experts and social scientists develop interventions to mitigate maternal inequities and improve population health (Carr et al. 2022).

Unpacking SMM Determinants: Racial/Ethnic Inequities, SES Disparities, and Diminishing Health Returns

As social determinants of health, racism – measured by race as proxy in this analysis - and education, contribute to SMM inequities. Stark racial/ethnic disparities are well-documented, and consistently reported, in health scholarship. After adjusting for a host of covariates (i.e. pre-pregnancy body mass index, birth order) Black women are more likely to experience adverse maternal, infant, and reproductive outcomes (Bediako, BeLue, and Hillemeier 2015; Bryant et al. 2010; Johnson et al. 2023). For example, in a multistate analysis of hospital births Non-Hispanic Black women had 2.1 times higher SMM rates than Non-Hispanic White women (Creanga et al. 2014). Other studies present comparable results (Howland et al. 2019; Leonard et al. 2019). An epidemiological study examined SMM prevalence and trends using California vital records and

hospital data (Leonard et al., 2019). Relative to Non-Hispanic White, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native women, Non-Hispanic Black women had the highest prevalence of SMM. This disparity persisted over time and remained after controlling for initiation of prenatal care and other sociodemographic characteristics. Because the risk of SMM remains after accounting for individual and behavioral factors, health researchers are increasingly looking to structural factors (i.e. residential segregation) and implicit bias during patient provider interactions to explain adverse health among Black communities (Williams and Collins 2001).

Along with racial/ethnic disparities, social scientists also report health inequities across socioeconomic status (SES). Numerous studies document better health for individuals, and groups, with high SES. The reverse is also true. As SES declines, health can deteriorate (Ross and Mirowsky 1999; Ross and Wu 1995; Stewart et al. 2007; Zajacova and Lawrence 2018). SES is a holistic measure, traditionally comprised of education, income, occupation, and (sometimes) wealth. In this paper, I exclusively focus on education. Income and occupation can vary, but education is fairly constant, more reliable, and typically completed during the reproductive life course (Montez, Hummer, and Hayward 2012). Also, education can determine access to stable employment, dependable income, and safe neighborhoods (Zajacova and Lawrence 2018). Access to these material resources has important implications for health.

Research on the education-health relationship is abundant (Braveman et al. 2010; Crimmins and Saito 2001; Danler and Pfaff 2021; Hayward, Hummer, and Sasson 2015; Montez, Hummer, and Hayward 2012) but there is a paucity of scholarship on education and *maternal* health, specifically SMM. Findings from available, but scant, research on SMM and related outcomes inform my expectations for the education-SMM relationship in this paper. Results

from New York City birth certificate data, for instance, showed a significantly higher risk of SMM for high school graduates and women with less than a high school degree, compared to college educated women (Howland et al. 2019). Given prior research on racial disparities in maternal health and the education-health literature, I anticipate a higher probability of SMM for Non-Hispanic Black mothers compared to Non-Hispanic White mothers. Also, mothers with higher education will have a lower probability of SMM relative to mothers with lower education.

Although health scholarship documents better health as SES increases, SES measures are not synonymous across racial groups (Williams and Collins, 1995). Moreover, the "health returns" (Conti, Heckman, and Urzua 2010, p.1) or health advantages generally associated with educational gains may vary by race/ethnicity. To support this assumption, I draw attention to recent empirical evidence. Eliner and colleagues (2022) found a higher likelihood of cesarean births for Black women, relative to White women. These differences appeared at all educational levels and became stronger at higher levels of education (aOR of 1.40 for Black women with less than high school, 1.44 for Black women with a high school credential, 1.69 for Black women with a college degree, and 1.70 for Black women with an advanced degree). Another study predicted self-rated health for White and Black adults across educational categories (Farmer and Ferraro 2005). Among Black adults with the lowest education, self-rated health was slightly higher for this group, relative to the self-rated health of White adults in the same SES strata. At the highest educational level, Black adults noted significantly lower self-rated health than White adults. Thus, a Black-White gap in self-rated health existed at all levels of education, and increasing education was protective against poor self-rated health for Whites but less beneficial for Black's self-rated health. In related scholarship, higher education was also less protective against breast cancer for Black women. Using U.S. mortality data Albano and colleagues (2007)

examined breast cancer mortality risk by education and race and found a Black-White gap at all education levels with the rate of death consistently higher for Black women. As education advanced, for both racial groups, the difference in relative risk of breast cancer mortality increased.

This literature aligns with the diminishing returns hypothesis, a conceptual framework that presupposes Black Americans garner fewer health advantages as they ascend the SES ladder (Farmer and Ferraro 2005; Nuru-Jeter et al. 2018). In other words, because significant racial health inequities remain even at the highest SES level, "high SEP [socioeconomic position] does not buy the same level of health for African Americans relative to Whites" (Nuru-Jeter et al, 2018, p.178). As Black women climb the proverbial 'social ladder' they may experience adverse health outcomes from encountering additional stressors associated with work-related discrimination and/or stereotype threat (Abdou and Fingerhut 2014; Nuru-Jeter et al. 2018). Token stress, for instance, may harm elite, economically privileged Black women who work in racially homogenous spaces. The absence of other Black women, or staff of Color in the work setting, may cause Black women to feel isolated and over-worked. Pressured to exert additional competence to dispel racialized beliefs, these 'privileged' Black women may experience depression and anxiety (Jackson and Stewart 2003; Jackson, Thoits, and Taylor 1995). If unaddressed, this toxic work environment might engender poor, chronic physical health indirectly leading to deleterious outcomes in labor and birth.

In sum, the diminishing returns hypothesis provides compelling evidence for a moderating effect of education. Therefore, in contrast to educationally privileged White mothers, higher education will be less protective against SMM for Black mothers. Building upon existing

scholarship in health, racial disparities, and SES inequality I anticipate a widening Black-White gap in SMM as education increases.

(Still) Unpacking SMM Determinants: Advanced Maternal Age and Weathering

Akin to racism and education, maternal age matters for childbearing outcomes. As women increasingly delay childbearing or turn to advanced medical technology (i.e. assisted reproductive technology) (Livingston 2018; Tierney and Cai 2019), advanced maternal age (AMA) births continue to increase. Notwithstanding the fact that the AMA category fluctuates and has been critiqued as a social construction based on agist and sexist assumptions about reproductive bodies (American College of Obstetrics and Gynecology and Society for Maternal-Fetal Medicine 2023:35; Berkowitz and Mann 2023; Cardin 2020) health scholarship consistently shows adverse pregnancy outcomes for mothers at the extreme end of the reproductive age spectrum (Carr et al. 2022; Frederiksen et al. 2017; Hoyert 2022).

Notably, when health professionals affix all women with an AMA 'label,' regardless of social location, these scientists obfuscate important racial heterogeneity in the effect of age on maternal health. Furthermore, medical literature over-emphasizes physiological, rather than social, factors as the primary source of adverse birth outcomes among older mothers (Gantt et al., 2023; Sauer, 2015; The American College of Obstetricians and Gynecologists, 2023). Geronimus' (1992) weathering hypothesis accounts for racial heterogeneity in the effect of age by acknowledging the cumulative impact of social disadvantage. In essence, external forces, such as racism and misogynoir are chronic stressors (Bailey 2021; Perry et al. 2013; Williams 2018) that can lead to the expediated deterioration of Black women's bodies, relative to White women. In later iterations of the weathering framework Geronimus and colleagues (2006) coupled this hypothesis with McEwen and Seeman's (1999) allostatic load. By measuring key

biomarkers, allostatic load and weathering foreground the emotional and physiological toil racism-related stressors can have on reproductive health (Dominguez et al. 2008; Liu and Glynn 2022). Since systemic racism is a fundamental cause of disease (Phelan and Link 2015; Williams et al. 2019) and Black women are more likely to experience racial discrimination - a documented stressor - Black women's bodies literally erode quicker than their White counterparts (Goosby, Cheadle, and Mitchell 2018; Mustillo et al. 2004; Perry et al. 2013; Rosenthal and Lobel 2011; Williams and Sternthal 2010). Geronimus and colleagues' (2006) work has shown how Black individuals, at all age groups, have greater odds of a high allostatic load than White individuals. They reasoned, "the stressors associated with living in a race-conscious society may lead to early health deterioration in Black women through a complex mechanism that includes telomere shortening" (Geronimus, 2006, p.831). Related work from the Study of Women's Health Across the Nation confirmed this by measuring differences in Black-White telomere length (Geronimus et al. 2010). DNA sample analysis showed middle-aged Black women, between 49-55, were approximately 7.5 biological years older than White women (Geronimus et al. 2010).

Existing epidemiological and population health research has applied the weathering construct to studies on low birth weight, preterm birth, and small for gestational age (Love et al. 2010; Mark 2021). But there is limited scholarship on the moderating effect of age on racial disparities in maternal health, specifically SMM. One study showed that the Black-White gap in risk of an unplanned hysterectomy, ICU admission, eclampsia, and a ruptured uterus, widens as Black women age. For women 18 and younger, there was not a significant difference, between Black and White women, in the adjusted relative risk of these adverse outcomes. For all other age groups, the adjusted relative risk for Black women was significantly different than White women with the Black-White gap increasing with age (Carr et al. 2022). Using California birth

records another study estimated the average predicted probabilities of SMM across race, age, and education (Hailu et al. 2022). Across all maternal education categories, the Black-White gap in predicted probability of SMM increased with age. For instance, among women 20 or younger Non-Hispanic White women had a predicted probability of 8.5, whereas Non-Hispanic Black women had a predicted probability of 13.3. By age 35 this gap in predicted probability nearly doubles. Non-Hispanic White women, 35 or older, had a predicted probability of 14.8. Their Black counterparts had a predicted probability of 27.9. Motivated by the stress process model (Pearlin et al. 1981; Thoits 2010) described in the first chapter, which suggests worsening health when stressors are unabated by coping strategies, and the weathering pattern which posits racial variation in the age-health relationship, I anticipate higher probabilities of SMM as age increases for Black and White women with a widening Black-White gap in SMM at advanced maternal ages.

Data and Methods

Data

This analysis used 2016 birth certificate micro data from the U.S. National Vital Statistics System (National Center for Health Statistics, 2016). I used data from 2016 because marital status, a key sociodemographic covariate, was not provided by all states after 2016. Specifically, beginning in 2017, California stopped providing data on marital status. Representing the total number of annual live births occurring in the United States to U.S. residents, birth certificate data are based on the birth registration system (National Center for Health Statistics, 2016).

Nearly four million women gave birth in 2016 (total starting sample; n=3,956,112). I excluded mothers whose state of residence was outside of the 50 U.S. states or the District of Columbia (n=10,237). I also excluded mothers from other racial/ethnic groups, given the stark,

pervasive Black-White disparities in pregnancy and birth outcomes (n=1,330,921) (Adegoke et al. 2022; Cabacungan, Ngui, and McGinley 2012; Tanner et al. 2020). From the remaining analytic sample, less than 3% of cases were excluded due to missing information on covariates. Covariates with the most missing data included: gestational or pre-pregnancy smoking (n=12,568), prenatal care utilization (n=73,523), birth type (n=885), gestational age of newborn (n=1,656), and payment type (n=15,961). The final sample was 2,494,859 mothers.

Measures

In October 2015, The Centers for Disease Control and Prevention (2023c) identified 21 SMM indicators (see Table 2.1). From this list, three indicators are present on birth certificate data. The outcome of interest, severe maternal morbidity, is a composite measure of blood transfusion, eclampsia, and hysterectomy. Severe maternal morbidity is equal to 0 if mothers did not have any indicators. Mothers with one or more indicators were coded 1.

Table 2.1. Centers for Disease Control and Prevention Severe Maternal Morbidity Indicators

Severe Maternal Morbidity Indicator	**Diagnosis or Procedure**
1. Acute myocardial infarction	Diagnosis
2. Aneurysm	Diagnosis
3. Acute renal failure	Diagnosis
4. Adult respiratory distress syndrome	Diagnosis
5. Amniotic fluid embolism	Diagnosis
6. Cardiac arrest/ventricular fibrillation	Diagnosis
7. Conversion of cardiac rhythm	Procedure
8. Disseminated intravascular coagulation	Diagnosis
9. Eclampsia	**Diagnosis**
10. Heart failure/arrest during surgery or procedure	Diagnosis
11. Puerperal cerebrovascular disorders	Diagnosis
12. Pulmonary edema/acute heart failure	Diagnosis
13. Severe anesthesia complications	Diagnosis
14. Sepsis	Diagnosis
15. Shock	Diagnosis
16. Sickle cell disease with crisis	Diagnosis
17. Air and thrombotic embolism	Diagnosis
18. Hysterectomy	**Procedure**
19. Temporary tracheostomy	Procedure
20. Ventilation	Procedure
21. Blood products transfusion	**Procedure**
**Indicators in bold appear on the 2016 birth certificate data*	

Source: Centers for Disease Control and Prevention

Predictors. The key predictors included maternal race, maternal education, and maternal age. *Maternal race* included mothers who identified as Non-Hispanic Black (hereafter Black) and Non-Hispanic White (hereafter White [reference group]). *Maternal education* measured the highest level of school or degree at the time of birth, with six categories for: less than a high school degree, high school graduate or GED (reference group), some college, associate degree (AA, AS), bachelor's degree (BA, AB, or BS), and master's (MA, MS, MEng, MEd, MSW, MBA) or doctorate/professional degree (PhD, EdD, MD, DDS, DVM, LLB, JD). I used maternal education to measure socioeconomic status since the 2016 birth certificate records include information on maternal education but not income or occupation. *Maternal age* at the time of birth had six categories for: younger than 19 (reference group), 20-24, 25-29, 30-34, 35-39, and 40 or older. Younger births were the reference group since weathering literature suggests that maternal health patterns vary across race/ethnicity as maternal age increases (Geronimus 2023). I operationalized maternal age as a linear measure and selected a categorical measure for age because Akaike and Bayesian information indicated a better fit (Fabozzi et al. 2014).

Covariates. Because research identifies certain sociodemographic characteristics, maternal health co-morbidities, behavioral factors, and birthing conditions as significant for SMM (Leonard et al. 2020) I adjusted for additional indicators. Sociodemographic characteristics included *marital status* at the time of birth (unmarried, married [reference]), and *payment type* (private insurance, self-pay, Medicaid [reference], or other). To assess maternal health characteristics, I adjusted for *diabetes* (no gestational or pre-pregnancy diabetes [reference], yes gestational diabetes, only pre-pregnancy diabetes) and *hypertension* (no gestational or pre-pregnancy hypertension [reference], yes gestational hypertension, only pre-pregnancy hypertension). I used categorical measures to adjust for two behavioral factors – *prenatal care*

utilization during pregnancy (no prenatal care [reference], prenatal care began in the 1st to 3rd month, prenatal care began in the 4th to 6th month, and prenatal care began in the 7th to 9th month) and *tobacco use* (no gestational or pre-pregnancy smoking [reference], yes gestational smoking, and only pre-pregnancy smoking). Finally, birthing characteristics measured *birth type* (vaginal birth [reference], cesarean birth), *gestational age of newborn* (preterm/born prior to 37-weeks gestation [reference], and not preterm/born after 37-weeks gestation), and *plurality* (single gestation [reference] and multiple gestation).

Analytic Strategy

First, I present characteristics of the overall sample and a subset of the sample with severe maternal morbidity. I also present descriptive information on the subset of mothers with SMM by maternal race. I include frequency and percent distribution for all variables in the descriptive tables. Next, I conducted a series of logistic regression models to predict the odds of SMM. The first model estimated the associations between maternal race, education, age, and the odds of SMM, adjusting for all covariates at their means. To determine whether the association between SMM and maternal race significantly differed by education I generated my first interaction term (race*education) which I added to the initial regression model. For accessibility, I clarified the coefficients of the interaction term by estimating SMM in the predicted probability metric. Then I assessed within racial group heterogeneity (i.e. how SMM probability changed as Black and White mothers acquired more education). Next following Mize (2019), I used the model with race*education to calculate the Black-White gap in SMM probability and whether the size of the gap varied across education. Using the same analytic strategy, I also measured whether the association between SMM and maternal race significantly differed by age. I added race*age to the initial logistic regression model, assessed within racial group heterogeneity, tested for

changes in SMM probability as Black and White mothers aged, and measured whether the Black-White gap in SMM probability varied in size across age categories.

For accessibility, I briefly outline the structure of the logistic regression models. I begin with a 'base' model that predicts SMM by all the key predictors – maternal race, maternal education, and maternal age – controlling for all covariates at their means (Table 2.4). After this, I focus on the race-education-SMM relationship (Table 2.5 and Figure 2.2), showing within group heterogeneity for Black mothers (Table 2.6), then White mothers (Table 2.7). I conclude the race-education-SMM discussion by drawing attention to: 1) the Black-White gap in SMM for specific education categories and 2) variation in this gap across education categories (Table 2.8). Then I transition to the race-age-SMM relationship (Table 2.9 and Figure 2.3). Similarly, I start by showing within group heterogeneity for Black mothers (Table 2.10) then White mothers (Table 2.11). I conclude the results section with a presentation of: 1) the Black-White gap in SMM for specific age categories and 2) variation in this gap across age categories (Table 2.12).

Results

Descriptive Differences in SMM

Table 2.2 shows descriptive information for Black and White mothers in the entire analytic sample and a subset of mothers with SMM. Approximately 0.60% of mothers had SMM with a higher prevalence of blood transfusion only (0.28%) and eclampsia only (0.29%) compared to unplanned hysterectomy only (0.03%). Black mothers were approximately 21% of the overall sample. The overall sample was also highly educated. About 70% of mothers had some college education or more. Most mothers were between 20-35 with roughly 5% of the overall sample younger than 19 and around 3% older than 40.

For the subset of mothers with SMM, the percent category represents the percent of mothers with SMM *within* each category. For example, from the 14,554 mothers with SMM approximately 28% were Black mothers and an estimated 73% were White mothers. As expected, SMM is racialized. Note that Black mothers constitute approximately 21% of the overall sample but a larger percentage (27.12) of SMM cases. About 30% of mothers with SMM had a bachelor's degree or more. Regarding maternal age, about 15% of the overall sample was 35 or older, whereas roughly 20% of SMM cases were 35 or older.

Table 2.2. 2016 Maternal Characteristics Among Analytic Sample and SMM-Only Sample

	Overall (N=2,494,859)		**with SMM** (N=14,554)	
	(n)	(%)	(n)	(%)
Maternal Characteristics				
SMM	14,554	0.58		
Eclampsia Only	7,057	0.28		
Unplanned Hysterectomy Only	759	0.03		
Blood Transfusion Only	7,219	0.29		
Maternal Race				
Black	520,725	20.87	3,947	27.12
White	1,974,134	79.13	10,607	72.88
Maternal Education				
Less than a HS Degree	218,224	8.75	1,562	10.73
HS Degree/GED	590,851	23.68	3,795	26.08
Some college	543,246	21.77	3,357	23.07
Associate Degree	232,266	9.31	1,373	9.43
Bachelor's Degree	575,593	23.07	2,789	19.16
Master's Degree or Higher	334,679	13.41	1,678	11.53
Maternal Age				
<19	115,412	4.63	867	5.96
20-24	492,981	19.76	2,918	20.05
25-29	745,661	29.89	4,035	27.72
30-34	729,710	29.25	3,954	27.17
35-39	340,887	13.66	2,123	14.59
>40	70,208	2.81	657	4.51
Marital Status				
Married	1,576,096	63.17	8,312	57.1
Unmarried	918,763	36.83	6,242	42.89

(table cont'd.)

	Overall (N=2,494,859)		with SMM (N=14,554)	
	(n)	(%)	(n)	(%)
Payment Type				
Medicaid	935,750	37.51	6,097	41.89
Private Insurance	1,400,648	56.14	7,490	51.46
Self-Pay	72,410	2.9	364	2.5
Other	86,051	3.45	603	4.14
Tobacco Use				
No Gestational or Pre-pregnancy Smoking	2,185,287	87.59	12,520	86.02
Gestational Smoking	236,969	9.5	1,548	10.64
Pre-pregnancy Smoking Only	72,603	2.91	486	3.34
Prenatal Care Initiation				
No prenatal care	33,970	1.36	317	2.18
1st to 3rd month	1,974,322	79.14	11,279	77.5
4th to 6th month	385,884	15.47	2,368	16.27
7th to final month	100,683	4.04	590	4.05
Diabetes				
No Gestational or Pre-pregnancy Diabetes	2,343,948	93.95	13,031	89.54
Yes Gestational Diabetes	19,991	0.8	305	2.1
Pre-Pregnancy Diabetes Only	130,920	5.25	1,218	14.65
Hypertension				
No Gestational or Pre-pregnancy Hypertension	2,278,854	91.34	11,235	77.2
Yes Gestational Hypertension	165,453	6.63	2,515	17.28
Pre-pregnancy Hypertension Only	50,552	2.03	804	5.52
Birth Type				
Vaginal birth	1,696,735	68.01	6,194	42.56
Cesarean section birth	798,124	31.99	8,360	57.44
Gestational Age of Newborn				
Preterm <37 weeks	243,510	9.76	4,749	32.63
Not Preterm >37 weeks	2,251,349	90.24	9,805	67.37
Plurality				
Single gestation	2,401,373	96.25	12,861	88.37
Multiple gestation	93,486	3.75	1,693	11.63

Source: 2016 National Vital Statistics

Focusing on the subset of mothers with SMM, in Table 2.3 I show frequency and percent distributions by race. For the composite SMM measure, Black mothers had higher percentages of eclampsia (~52% vs. ~47% for White mothers) and unplanned hysterectomy (~4.5% vs. ~5.4% for White mothers). Over 75% of Black mothers with SMM had some college education or less. In comparison, approximately 52% of White mothers with SMM had some college or less. Across age, the distribution of SMM among Black and White mothers was similar. However,

about 33% of mothers younger than 24 were Black, relative to roughly 23% of White mothers in the same age categories.

Table 2.3. 2016 Maternal Characteristics by Maternal Race for SMM Cases

	Black (N=3,947)		**White** (N=10,607)	
	(n)	(%)	(n)	(%)
Eclampsia Only	2,069	52.42	4,988	47.03
Unplanned Hysterectomy Only	181	4.59	578	5.45
Blood Transfusion Only	1,816	46.01	5,403	50.94
Maternal Education				
Less than a HS Degree	659	16.70	903	8.51
HS Degree/GED	1,323	33.52	2,472	23.31
Some college	1,067	27.03	2,290	21.59
Associate Degree	299	7.58	1,074	10.13
Bachelor's Degree	358	9.07	2,431	22.92
Master's Degree or Higher	241	6.11	1,437	13.55
Maternal Age				
<19	305	7.73	562	5.30
20-24	990	25.08	1,928	18.18
25-29	1,047	26.53	2,988	28.17
30-34	878	22.24	3,076	29.00
35-39	537	13.61	1,586	14.95
>40	190	4.81	467	4.40
Marital Status				
Married	1,095	27.74	7,217	68.04
Unmarried	2,852	72.26	3,390	31.96
Payment Type				
Medicaid	2,642	66.94	3,455	32.57
Private Insurance	1,051	26.63	6,439	60.71
Self-Pay	105	2.66	259	2.44
Other	149	3.78	454	4.28
Tobacco Use Before Pregnancy				
No Gestational or Pre-pregnancy Smoking	3,600	91.21	8,920	84.10
Gestational Smoking	269	6.82	1,279	12.06
Pre-pregnancy Smoking Only	78	1.98	408	3.85
Prenatal Care Initiation				
No prenatal care	166	4.21	151	1.42
1st to 3rd month	2,596	65.77	8,683	81.86
4th to 6th month	949	24.04	1,419	13.38
7th to final month	236	5.98	354	3.34
Diabetes				
No Gestational or Pre-pregnancy Diabetes	3,560	90.20	9,471	89.29
Yes Gestational Diabetes	92	2.33	213	2.01
Pre-Pregnancy Diabetes Only	295	7.47	923	8.70

(table cont'd.)

	Black (N=3,947)		White (N=10,607)	
	(n)	(%)	(n)	(%)
Hypertension				
No Gestational or Pre-pregnancy Hypertension	2,887	73.14	8,348	78.70
Yes Gestational Hypertension	733	18.57	1,782	16.80
Pre-pregnancy Hypertension Only	327	8.28	477	4.50
Birth Type				
Vaginal birth	1,399	35.44	4,795	45.21
Cesarean section	2,548	64.56	5,812	54.79
Gestational Age of Newborn				
Preterm <37 weeks	1,490	37.75	3,259	30.72
Not Preterm >37 weeks	2,457	62.25	7,348	69.28
Plurality				
Single gestation	3,532	89.49	9,329	87.95
Multiple gestation	415	10.51	1,278	12.05

Source: 2016 National Vital Statistics

Logistic Regression

In Table 2.4 I show results from a logistic regression model that estimated the odds of severe maternal morbidity by the key predictors – maternal race, maternal education, and maternal age – controlling for all covariates at their means. As expected, relative to White mothers, Black mothers had significantly higher odds (OR=1.11; $p<0.001$) of SMM. Mothers with less than a high school degree had higher odds (OR=1.08; $p<0.05$) of SMM relative to mothers with a high school degree. Contrarily, mothers with a bachelor's degree or more had significantly lower odds of SMM than mothers with a high school credential (OR=0.86, $p<0.001$ for bachelor's degree; OR=0.88, $p<0.001$ for master's degree or higher). Compared to mothers between ages 25-29, most mothers in other age categories (<19, 20-24, >40) had significantly higher odds of SMM. Although not significant, for mothers between 30-34 the odds of SMM were slightly lower than the odds for mothers between 25-29.

Table 2.4. SMM for 2016 U.S. Births Among Black and White Mothers

	Odds Ratio	Standard Error
Maternal Race (ref White)		
Black	1.11***	-0.02
Maternal Education (ref HS Degree)		
Less than a HS Degree	1.08*	-0.03
Some College	0.98	-0.02
Associate Degree	0.96	-0.03
Bachelor's Degree	0.86***	-0.03
Master's Degree or Higher	0.88***	-0.03
Maternal Age (ref 25-29)		
<19	1.33***	-0.05
20-24	1.06*	-0.03
30-34	0.99	-0.02
35-39	1.02	-0.03
>40	1.28***	-0.06
Marital Status (ref Married)		
Unmarried	1.07**	-0.02
Payment Type (ref Medicaid)		
Private Insurance	1.01	-0.02
Self-Pay	1.04	-0.06
Other	1.29***	-0.06
Diabetes (ref No Gestational or Pre-Pregnancy Diabetes)		
Yes Gestational Diabetes	1.26***	-0.08
Only Pre-Pregnancy Diabetes	1.26***	-0.04
Hypertension (ref No Gestational or Pre-Pregnancy Hypertension)		
Yes Gestational Hypertension	2.07***	-0.05
Only Pre-Pregnancy Hypertension	1.99***	-0.08
Prenatal Care Utilization (ref No Prenatal Care)		
1st to 3rd month	0.85**	-0.05
4th to 6th month	0.87*	-0.05
7th to final month	0.89+	-0.06
Tobacco Use (ref No Gestational or Pre-pregnancy Tobacco Use)		
Yes Gestational Smoking	1.00	-0.03
Only Pre-Pregnancy Smoking	1.08+	-0.05
Birth Type (ref Vaginal Birth)		
Cesarean Section	2.24***	-0.04
Gestational Age of Newborn (ref Preterm <37 weeks)		
Not preterm (>37 weeks gestation)	0.33***	-0.01
Plurality (ref. Single Gestation)		
Multiple Gestation	1.24***	-0.04

(table cont'd.)

	Odds Ratio	Standard Error
Constant	0.01***	
Observations	2,494,859	
Pseudo R-squared	0.0562	

Note: †$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$; All covariates are adjusted at their mean.
Source: 2016 National Vital Statistics

Race x Education

Adding race*education to the initial regression model, I present coefficients for maternal race, maternal education, and race*education in Table 2.5 (see Appendix A, Table A.1 for the full model with coefficients for all covariates). Using post-estimation values from this regression model, I show predicted probabilities of SMM for Black mothers (Table 2.6) and White mothers (Table 2.7) across each educational category (also see Figure 2.2). The 'differs from' column, in each table, reports whether there is a statistically significant difference across educational categories.

Table 2.5. SMM for 2016 U.S. Births Among Black and White Mothers Including Race*Education

	Odds Ratio
Maternal Race (ref White)	
Black	1.05
Maternal Education (ref HS Degree)	
Less than a HS Degree	1.04
Some College	0.95+
Associate Degree	0.94+
Bachelor's Degree	0.86***
Master's Degree or Higher	0.85***
Race x Education (ref White x HS Degree)	
Black x Less than High School	1.12+
Black x Some college	1.10+
Black x Associate Degree	1.06
Black x Bachelor's Degree	0.96
Black x Master's Degree or Higher	1.17*
Constant	0.01***
Observations	2,494,859
Pseudo R-squared	0.0562

Note: †$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$; Model is adjusted for maternal age, marital status, payment type, diabetes, hypertension, prenatal care utilization, tobacco use, birth type, gestational age of newborn, and plurality. All covariates are adjusted at their mean. Standard errors omitted for accessibility (see Appendix A).
Source: 2016 National Vital Statistics

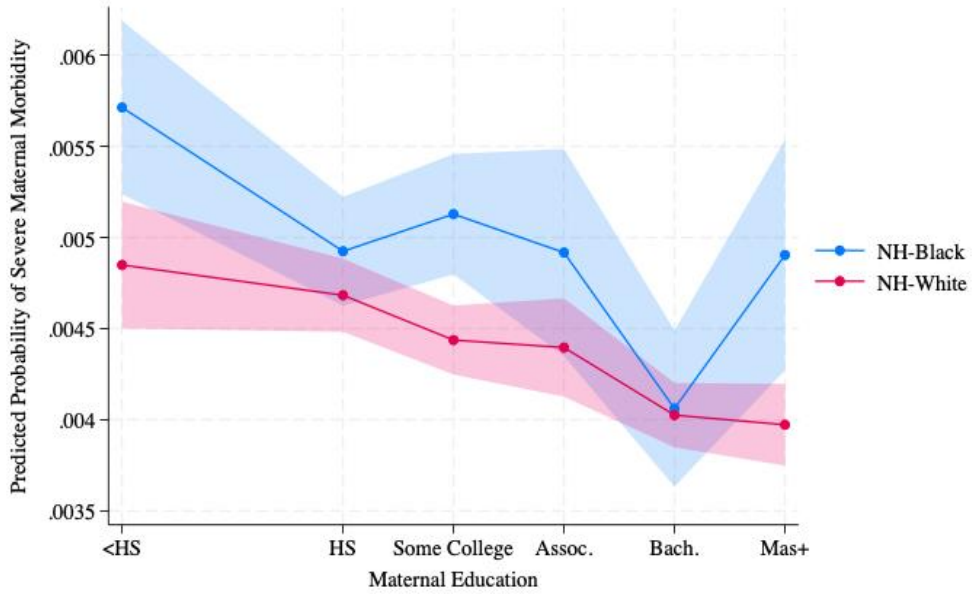

Figure 2.2. Predicted Probability of Severe Maternal Morbidity in 2016 for Black and White Mothers, by Maternal Education

Note: Model is adjusted for maternal age, marital status, payment type, diabetes, hypertension, prenatal care utilization, tobacco use, birth type, gestational age of newborn, and plurality. Shaded areas are 95% confidence intervals

For Black mothers, SMM probability fluctuates as education increases. SMM probability is the highest for Black mothers with less than a high school degree (0.0057) and lowest for Black mothers with a bachelor's degree (0.0041). The probability of SMM for Black mothers with less than a high school degree is statistically higher than all other educational categories. Similarly, the probability of SMM for Black mothers with a bachelor's degree is statistically lower than all other educational categories. Although the probability of SMM changes, slightly, between high school degree (0.0049), some college (0.0051), and associate degree (0.0049), the probability of SMM for Black mothers with a high school degree is not statistically different than the probability of SMM for Black mothers with some college or an associate degree. Also note the probability of SMM for Black mothers with a high school degree, associate degree, and master's degree or higher is approximately the same (0.0049 for all categories).

Table 2.6. Probability of Severe Maternal Morbidity for Black Mothers by Education

	Black	Differs From
Less than a HS Degree	0.0057	**HS, Some college, Associate, Bachelors, Masters+**
HS Degree/GED	0.0049	**<HS, Bachelors**
Some College	0.0051	**<HS, Bachelors**
Associate Degree	0.0049	**<HS, Bachelors**
Bachelor's Degree	0.0041	**<HS, HS, Some college, Associate, Masters+**
Master's Degree or Higher	0.0049	**<HS, Bachelors**

Note: The "differs from" column reports whether there is a statistically significant difference across educational categories. Bold indicates significance at $p<0.05$. Predicted probabilities come from the logistic regression model with race*education (see Table 2.5).
Source: 2016 National Vital Statistics

As Black mothers achieve higher education, the probability of SMM fluctuates. For White mothers, SMM probability declines steadily as education increases. Indeed, White mothers with less than a high school degree have the highest SMM probability (0.0048) and White mothers with a bachelor's degree or more have the lowest probability of SMM (0.0040). The SMM probability for White mothers with less than a high school degree is stastically higher than all other educational categories except high school degree. The probability of SMM for White mothers with a bachelor's degree and master's degree or higher is statistically lower than White mothers with an associate degree, some college, a high school degree, and less than a high school credential. There is also a difference in SMM probability between White mothers with some college or an associate degree and White mothers in other educational categories. Specifically, White mothers with some college or an associate degree have a statistically higher probability of SMM than White mothers with a bachelor's degree or higher, but a marginally lower probability than White mother's with a high school degree and a statistically lower probability than White mother's with less than a high school degree. In essence, White mothers garner the first health advantage (i.e. the probability of SMM significantly decreases) when they obtain some college education or an associate degree. White mothers receive another health advantage when they obtain a bachelor's degree or more.

Table 2.7. Probability of Severe Maternal Morbidity for White Mothers by Education

	White	Differs From
Less than a HS Degree	0.0048	**Some college, Associate, Bachelors, Masters+**
HS Degree/GED	0.0047	*Some college, Associate,* **Bachelors, Masters+**
Some College	0.0044	**<HS,** *HS,* **Bachelors, Masters+**
Associate Degree	0.0044	**<HS,** *HS,* **Bachelors, Masters+**
Bachelor's Degree	0.0040	**<HS, HS, Some college, Associate**
Master's Degree or Higher	0.0040	**<HS, HS, Some college, Associate**

Note: The "differs from" column reports whether there is a statistically significant difference across educational categories. Bold indicates significance at p<.05. Italics indicates significance at p<.10. Predicted probabilities come from the logistic regression model with race*education (see Table 2.5).
Source: 2016 National Vital Statistics

Combining the information from the two prior tables, I show similar information using different approaches in Table 2.8 (refer back to Figure 2.2). Here I focus on the Black-White gap in SMM probability across education. The 'racial gap' column (i.e. the Black-White gap) reports whether the difference in the probability of SMM for Black and White mothers at the specified educational category is statistically significant. The 'differs from' column reports whether the Black-White racial gaps are significantly different across categories of education. Note, the Black-White gap does not widen consistently as education increases. Rather the gap is large and significant at less than a high school degree (0.0009, $p<0.05$), some college (0.0007, $p<0.05$), and a master's degree or higher (0.0009, $p<0.05$). The racial gap converges for mothers with a bachelor's degree (0.0000) and nearly converges for mothers with a high school degree (0.0002). Also, the gaps at the highest level of education (i.e. mothers with a master's degree or more) and the lowest level of education (i.e. less than a high school degree) are nearly the same.

Regarding differences in racial gaps across education categories, the Black-White gap at bachelor's degree is significantly smaller ($p<0.05$) than the gaps at less than a high school degree, some college, and a master's degree or more. Also, the racial gap at high school degree is marginally smaller ($p<0.10$) than the gaps at less than a high school degree, some college, and a master's degree or more.

Table 2.8. Predicted Probability of Severe Maternal Morbidity by Race and Education

	Black	White	Racial Gap	Differs From
Less than HS Degree	0.0057	0.0048	**0.0009**	*HS,* **Bachelors**
HS Degree/GED	0.0049	0.0047	0.0002	*<HS, Some college, Masters+*
Some College	0.0051	0.0044	**0.0007**	*HS,* **Bachelors**
Associate Degree	0.0049	0.0044	0.0005	
Bachelor's Degree	0.0041	0.0040	0.0000	**<HS, Some college, Masters+**
Master's Degree or Higher	0.0049	0.0040	**0.0009**	*HS,* **Bachelors**

Note: The "racial gap" column reports whether the difference in the probability of SMM for Black and White mothers at the specified educational category is statistically significant. The "differs from" column reports whether the racial gaps are significantly different across categories of education. Bold indicates significance at p<.05. Italics indicates significance at p<.10.
Source: 2016 National Vital Statistics

Race x Age

Adding race*age to the initial regression model (refer back to Table 2.4), I present coefficients for maternal race, maternal age, and race*age in Table 2.9 and Figure 2.3 (see Appendix A, Table A.2 for full model with coefficients for all covariates). I show predicted probabilities of SMM for Black mothers (Table 2.10) and White mothers (Table 2.11) across each age category using post-estimation values from the regression model with race*age. The 'differs from' column in each table reports whether there is a statistically significant difference across age categories.

Table 2.9. Logistic Regression Predicting SMM for 2016 U.S. Births Among Black and White Mothers Including Race*Age

	Odds Ratio
Maternal Race (ref White)	
Black	1.08+
Maternal Age (ref 25-29)	
<19	1.43***
20-24	1.07*
30-34	0.97
35-39	0.99
>40	1.25***
Race x Age (ref White x 25-29)	
Black x <19	0.84*
Black x 20-24	0.99
Black x 30-34	1.11*
Black x 35-39	1.14*
Black x >40	1.10

(table cont'd.)

	Odds Ratio
Constant	0.01***
Observations	2,494,859
Pseudo R-squared	0.0563

Note: $^{\dagger}p < .10$. $*p < .05$. $**p < .01$. $***p < .001$; Model is adjusted for maternal education, marital status, payment type, diabetes, hypertension, prenatal care utilization, tobacco use, birth type, gestational age of newborn, and plurality. All covariates are adjusted at their mean. Standard errors omitted for accessibility (see Appendix A, Table A.2).
Source: 2016 National Vital Statistics

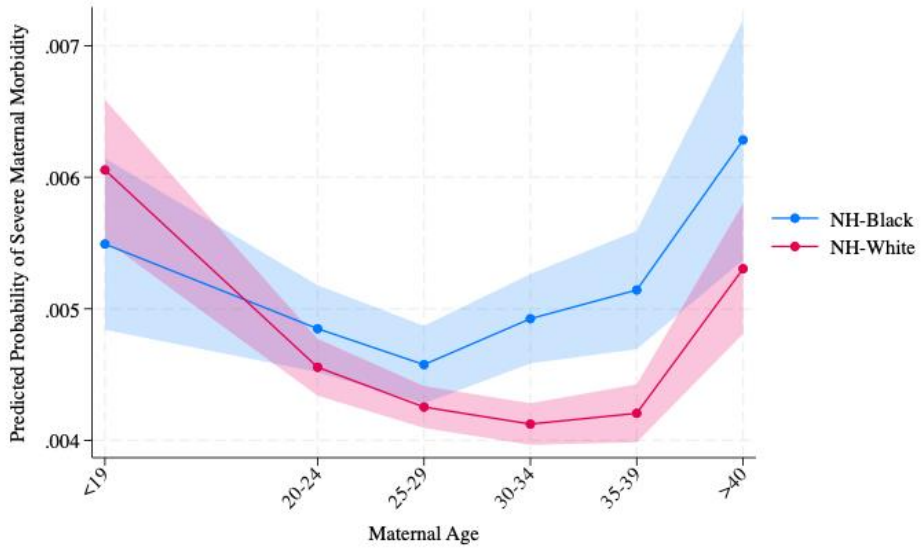

Figure 2.3. Predicted Probability of Severe Maternal Morbidity in 2016 for Black and White Mothers, by Maternal Age
Note: Model is adjusted for maternal education, marital status, payment type, diabetes, hypertension, prenatal care utilization, tobacco use, birth type, gestational age of newborn, and plurality. Shaded areas are 95% confidence intervals.

Among Black mothers, SMM probability is the highest for individuals who are 40 and older (0.0063) and lowest for mothers between 25-29 (0.0046). SMM probability declines steadily from younger than 19 to 25-29 and then increases steadily from 30-39 with another sharp increase after 40. The probability of SMM does not significantly differ for Black mothers during their 20s. Relatedly, the probability of SMM does not significantly differ for Black mothers throughout their 30s. Stated differently, there is not a statistically significant difference in SMM probability between Black mothers 20-24 and 25-29 and there is not a statistically significant difference in SMM probability between Black mothers 30-34 and 35-39. However,

SMM probability is significantly lower for Black mothers between 25-29, relative to mothers 35 and older. Also, Black mothers between 30-34 and 35-39 have significantly lower SMM probability than Black mothers over 40.

Table 2.10. Probability of Severe Maternal Morbidity for Black Mothers by Age

	Black	**Differs From**
<19	0.0055	*20-24*, **25-29**
20-24	0.0048	*<19*
25-29	0.0046	**<19, 35-39, >40**
30-34	0.0049	**>40**
35-39	0.0051	**25-29, >40**
>40	0.0063	**25-29, 30-34, 35-39**

Note: The "differs from" column reports whether there is a statistically significant difference across age categories. Bold indicates significance at p<.05. Italics indicates significance at p<.10. Predicted probabilities come from the logistic regression model with race*age (Table 2.9).
Source: 2016 National Vital Statistics

While the highest SMM probability for Black mothers was at the oldest age category (40 and older), for White mothers the highest SMM probability is at the youngest age category (19 and younger). After 19 the probability of SMM declines sharply and significantly and then decreases steadily after 24 until White mothers turn 40. At 40, SMM probability increases. For White mothers, the probability of SMM is significantly higher at the youngest and oldest ages compared with all other age categories. White mothers between 20-24 also have significantly higher SMM probability relative to mothers 25-29, 30-34, 35-39, and significantly lower SMM probability relative to mothers 40 or older. There are no statistically significant differences in SMM probability between 25-39.

Table 2.11. Probability of Severe Maternal Morbidity for White Mothers by Age

	White	Differs From
<19	0.0061	**20-24, 25-29, 30-34, 35-39, >40**
20-24	0.0046	**<19, 25-29, 30-34, 35-39, >40**
25-29	0.0043	**<19, 20-24, >40**
30-34	0.0041	**<19, 20-24, >40**
35-39	0.0042	**<19, 20-24, >40**
>40	0.0053	**<19, 20-24, 25-29, 30-34, 35-39**

Note: The "differs from" column reports whether there is a statistically significant difference across educational categories. Bold indicates significance at p<.05. Predicted probabilities come from the logistic regression model with race*age (Table 2.9).
Source: 2016 National Vital Statistics

In Figure 2.3 and Table 2.12 I present the Black-White gap in SMM probability across age. Again, the 'racial gap' column (i.e. the Black-White gap) reports whether the difference in the probability of SMM between Black and White mothers at the specified age category is statistically significant. The 'differs from' column reports whether the Black-White racial gaps are significantly different across age categories. After age 20, as expected, the racial gap widens consistently as mothers advance in age. The racial gap is the smallest for mothers between 20-24 (0.0002). This gap becomes marginally significant at 25-29 (0.0003, $p<0.10$) and statistically significant between 30-39 (0.0008, $p<0.05$ at 30-34; 0.0009, $p<0.05$ at 35-39). The largest racial gap at 40 or older (0.0010, $p<0.010$) is marginally significant. Also note, the lowest SMM probability for White mothers is observed between 30-34, whereas the lowest SMM probability for Black mother is observed five-to-nine years earlier, between 25-29.

With respect to differences in racial gaps across age, the racial gap for the youngest age category (<19) is significantly different than most other ages, since White mothers (compared to Black mothers) have a higher probability of SMM prior to 19. The racial gap between 30-34 is marginally larger than the racial gaps in the 20s and the racial gap between 35-39 is larger and significantly different than the racial gaps in the 20s.

Table 2.12. Probability of Severe Maternal Morbidity for Black and White Mothers by Race and Age

	Black	White	Racial Gap	Differs From
<19	0.0055	0.0061	-0.0006	*20-24,* **25-29, 30-34, 35-39, >40**
20-24	0.0048	0.0046	0.0002	*<19, 30-34,* **35-39**
25-29	0.0046	0.0043	*0.0003*	**<19,** *30-34,* **35-39**
30-34	0.0049	0.0041	**0.0008**	**<19,** *20-24, 25-29*
35-39	0.0051	0.0042	**0.0009**	**<19, 20-24, 25-29**
>40	0.0063	0.0053	*0.0010*	**<19**

Note: The "racial gap" column reports whether the difference in the probability of SMM for Black and White mothers at the specified age category is statistically significant. The "differs from" column reports whether the racial gaps are significantly different across age. Bold indicates significance at p<.05. Italics indicates significance at p<.10.

Source: 2016 National Vital Statistics

Discussion

In this paper I used national data from birth certificate records to provide estimates of SMM by maternal race, maternal education, and maternal age. As expected, Black mothers had a higher probability of SMM relative to White mothers. After controlling for a host of individual, social, and behavioral factors racial disparities remained. This draws attention to other determinants – racial bias in the obstetric setting and structural factors – as explanatory factors. I expand on the relationship between racial bias in the obstetric setting and maternal health outcomes in the next paper.

I also assessed the relationship between race, education, and SMM. I hypothesized higher education as protective against SMM. Among both racial groups mothers with less than a high school degree had the highest probability of SMM. However, the health advantages associated with a post-high school education varied by race. As education increased for White mothers there was a steady decline in SMM probability. Having some college credit predicted lower SMM probability (i.e. better health) for White mothers. This racially privileged group received another reduction in SMM probability after obtaining a bachelor's degree or more. Contrarily, for Black mothers some college education did not foster health advantages, and importantly

having the highest level of education (i.e. a master's degree or more) constituted higher SMM probability (or worse health) than a bachelor's degree.

Examining the racial gap in SMM across levels of education provides additional context for my findings. Motivated by the diminishing returns hypothesis, I anticipated a widening racial gap as education increased. I found inconsistent support for this hypothesis. Although the racial gap was large and significant at the highest end of the educational spectrum (i.e. among Black and White mothers with a master's degree or more the 0.0009 racial gap was significant), the smallest racial gaps were at educational milestones. I consider several explanations for these results.

For White mothers, the relationship between education and health is likely explained, at least in part, by the quantity or continuous model (Montez et al. 2012; Ross and Mirowsky 1999). This perspective emphasizes years of schooling. More schooling equates to more human capital. Individuals, or social groups, with more human capital likely have additional resources that foster better health (Ross and Mirowsky 1999). For White mothers, this means that each additional year of school equates to a health advantage with no "ceiling effect" (Montez et al. 2012, p.11) on the long-term benefits of additional education. Extending the continuous model, Montez and colleagues (2012) offer two more claims about education and health. First, White mothers receive an initial health advantage for obtaining a high school degree and *another* reward for every year of education post-high school. Also, acquiring some college, irrespective of a credential, contributes to better health for White mothers. Taken together, these claims about the continuous model support the education-health pattern I found among White mothers.

Contrarily, the credential model and diminishing returns hypothesis support the education-health pattern for Black mothers in this study. Reinforced by institutional power relations, such

as employment bias and workplace discrimination, the credential perspective renders years of school as meaningless. This model focuses on educational degrees. Because employers typically make hiring decisions based on credentials, this model assumes credentials matter most for health (Ross and Mirowsky 1999). As such, having reliable employment with adequate benefits may help individuals invest in healthier lifestyles (Robert Wood Johnson Foundation 2013; Ross and Mirowsky 1999). My findings support the core assumptions of the credential model since the Black-White racial gap converged for individuals with a bachelor's degree and remained small at other educational milestones (i.e. a high school degree and associate degree). However, the racial gap widened among individuals with advanced education, restricting the protective effect of educational credentials for Black mothers. In other words, for Black mothers the health advantages associated with higher education stop, and actually worsen, post-bachelors. In sum, small educational gains appear to matter for White mothers, whereas credentials - until a certain point - are most substantial for Black mothers.

Because Black mothers are disproportionately impacted by structural barriers which likely mute the health advantages associated with advanced education (Williams 1999), I emphasize two structural factors - workplace discrimination and racial disparities in wealth accumulation – as potential mechanisms undergirding my findings. As documented in prior research, upwardly mobile Black Americans report more experiences with acute discrimination, relative to their White counterparts (Colen et al. 2018). More exposure to discrimination, acute and chronic, can also increase stress. High stress levels engender adverse physiological responses leading to poor maternal health and birth outcomes (Colen 2011; Giscombé and Lobel 2005).

The Black-White wealth gap is another viable explanation for diminishing returns. In 2016 the median annual earning for White women with a master's degree or higher was $61,000.

Black women with the same education only made $59,600 (US Department of Education 2019). Paired with the workplace bias described above, income inequalities can stagnate Black women's ability to acquire material resources that improve health (Colen 2011). Although beyond the scope of this analysis, understanding these mechanisms is an important step forward for health scholarship.

Along with education I recognized maternal age as an important determinant of maternal health. Consistent with the weathering hypothesis, I found a widening Black-White gap in SMM as mothers aged. In her seminal work Geronimus (1992) suggested rapid physiological aging among Black women due to cumulative disadvantage from oppression. A Black woman, for instance, with a biological age of 25 may resemble a 37-year-old woman at the physiological level. Patterson and colleagues (2022) summarize this as, "the passage of one year for white women is not the same as the passage of one year for Black women" (p.1266). Extending Geronimus' (1992) original hypothesis recent scholarship applies this concept to maternal mortality (Patterson et al. 2022) and stillbirth (Brisendine et al. 2020). Similar to my findings, both studies document age as moderating the relationship between race and health. In future work researchers might explore if, and to what extent, White mothers ever 'catch up' to the physiological age of Black mothers.

The findings in this paper should be considered alongside several limitations. First, due to data limitations, I was unable to include all SMM indicators in this analysis (see Table 2.1). However, blood transfusion, an indicator included in my composite measure of SMM, accounts for a sizeable portion of SMM cases (Declercq and Zephyrin 2021; Fingar et al. 2018). Future research might explore how SMM probability varies by maternal race, education, and age in nationally representative data with comprehensive measures. Additionally, most pregnancies are

uncomplicated (Declercq and Zephyrin 2021). Examining rare health outcomes in a large sample is more likely to yield statistical significance but can present challenges for substantive significance (Kaplan, Chambers, and Glasgow 2014). However, because SMM pertains to life-threatening circumstances, small changes correspond with negative consequences for birthing people and infants.

Despite these limitations, my findings provide key insights into racial inequities and maternal well-being. I highlight findings that draw attention from individual and behavioral factors to structural forces as social determinants of health, offer compelling evidence for racial variation in education-health patterns, and support existing knowledge on the weathering hypothesis. Due to complications tied to racism and classism, Black birthing people are still dying, or nearly dying. But Black birthing people are resilient actors and will continue to combat these inequities. To address the health disparities disenfranchising Black mothers, this paper calls upon researchers and health professionals to acknowledge the detrimental implications of systemically oppressive factors.

Chapter 3. Illuminating Obstetric Racism and White Privilege: Black-White Experiences with Pregnancy During the Covid-19 Pandemic

> As a Black woman, it's not enough to 'stay hydrated,' make your prenatal appointments and curate the perfect nursey on Pinterest. There are studies to digest, articles forwarded by your best friend on C-section rates to read, summits to attend on combating implicit bias, and doctors to screen for implicit bias. It is exhausting work.
> — Andrews-Dyer

Grappling with the reality faced by pregnant Black women in the U.S., Helena Andrews-Dyer penned this excerpt in a 2019 Washington Post article (Andrews-Dyer 2019). Because racism, sexism, and misogyny are embedded in the social and political fabric of this nation, the gestational outcomes of Black and White women are vastly different (Cooper Owens 2018; Feagin and Bennefield 2014; Patterson et al. 2022; Roberts 2017; Taylor 2020). Empirical evidence is clear - racial disparities exist in, and permeate throughout, many facets of maternal health care (Dominguez et al. 2008; Geronimus 1992; Giscombé and Lobel 2005; Kramer and Hogue 2009; Patterson et al. 2022). As documented in the prior paper, Black women are more likely to experience complications from severe maternal morbidity, a pattern likely caused by, at least to some degree, racial bias in reproductive healthcare. To further unravel this conjecture, in this paper I expand on how Black and White women perceived interactions with health providers during the first two years of the Covid-19 pandemic.

I begin by historicizing the emergence of obstetrics and gynecology in the U.S., emphasizing the involuntary and forced contributions of enslaved Black women. Alongside medical experimentation on these "Mothers of Gynecology" (Cooper Owens 2018, p.124), false claims about Black women's imperviousness to pain circulated in medical journals. This dangerous mythology contributed to cruel and harsh experimentation on Black bodies. A plethora of interdisciplinary scholarship shows how racist treatment experienced by Black women in the modern era continues to reflect this history (Altman et al. 2019; Cooper Owens

2018; Feagin 2013; Gallagher 2003; McLemore et al. 2018; Roberts 2017; Washington 2006). Because of this, Black women often try to pursue racial concordance with health professionals to mitigate exposure to racial bias, feel safe during patient provider interactions, and disrupt oppressive forces in obstetric settings. While Black women's experiences are unapologetically the focal point of this analysis, I tell the story of Black and White women's gestational journeys to emphasize the stark contrast between Black women's perceptions of discriminatory care and White women's depictions of attentive, respectful treatment. I integrate obstetric racism (Davis 2019a, 2020) with colorblind theory (Bonilla-Silva 2022) and the theory of racial ignorance (Mueller 2020) to analyze narratives from semi-structured interviews with 35 Black and White women who experienced pregnancy during a pandemic. Further, I contextualize these stories within a specific cultural moment and characterize the Covid-19 pandemic as a public health emergency which magnified racial inequities in obstetric care. In so doing, I extend critical race scholarship on reproduction and health by illuminating the ways that obstetric racism, White privilege, and Black women's resistance emerge in encounters with obstetric care professionals and the medical industrial complex.

Denigrating Black Women's Bodies: Historical and Contemporary Experiences

Present-day disparities in reproductive health are tethered to U.S. slavery, biased medical training, and racist obstetric practices (Cooper Owens 2018; Feagin 2013; Gallagher 2003). To sustain elite White's capitalistic endeavors, anti-Blackness was fused into the U.S. antebellum economy (Williams Comrie et al. 2022). Exploited in death, enslaved Black bodies were procured through grave robbing and publicly dissected for medical 'research' (Ramey Berry 2017). Denigrated in life, Black bodies were forced into breeding practices. By commodifying

Black women's wombs, White planters sustained domestic slave trading well after international trading was abolished (Cooper Owens 2018; Ramey Berry 2017; Roberts 2017).

Contemporary reproductive medicine is indebted to Lucy, Anarcha, Betsy, and nine additional unidentified enslaved women. Now known as 'The Mothers of Gynecology" (Cooper Owens 2018, p.124), these Black women forcibly endured barbaric procedures from James Marion Sims during the 1800s. The very existence of obstetrics and gynecology in the U.S. is tethered to these enslaved women. Until recently their narratives were obscured and overshadowed by Sims who gained notoriety for his treatment of their vesicovaginal fistulas. Thanks to the diligent work of Black feminists, their stories have now been written and we can finally acknowledge their involuntary contributions to medicine.

By the late 1700s, medical experimentation on African Americans was normative (Washington 2006) and physicians frequently mutilated Black bodies in the name of medical and scientific advancement. James Marion Sims was therefore not particularly unique. His experimentation on Black women's bodies for the development of U.S. obstetrics began in the mid-nineteenth century. In 1845, Sims was summoned to the Westcott plantation where a 17-year-old Anarcha was pregnant and petrified. After laboring for three days, she was likely exhausted, her pain increasingly becoming more unbearable. Despite minimal experience with obstetrical forceps Sims, a plantation physician, used the medical instrument during Anarcha's birth. Anarcha's child died. Her vagina tore. And because the new mother had a vesicovaginal fistula her agony, torment, and piercing distress were far from over. The gaping orifice spreading from the remains of Anarcha's vagina to rectum produced incontinence, a pungent odor, and excruciating pain. Per historian Harriet Washington (2006), it is unclear whether "a confluence

of malnutrition [which was typical for enslaved women at that time], forceps use, [or] Anarcha's youth" (p.64) contributed to the postpartum complications.

From 1845 to 1849 Sims experimented on enslaved women trying to find a treatment for the vesicovaginal fistula. Even though anesthetic practices were introduced to the medical community around the 1840s and were available to Sims, Sims refused to administer any relief to Anarcha, Lucy, or the other Black women during his procedures (Washington 2006). Sims initially had a team of other male physicians who were tasked with restraining the women while he sutured together the frayed edges of their vaginal tissue. But the women's "bone-chilling shrieks" (Washington, 2006, p.64) eventually became too much to bear and the male doctors abandoned Sims's service. This meant that enslaved Black women took turns holding each other down while Sims made the agonizing vaginal incisions. Anarcha, alone, endured thirty operations (Washington 2006).

According to historical records Sims's decision to perform surgery on unanesthetized Black women was likely related to perceptions about Black people and their imperviousness to pain (Washington 2006). In a leading 19th century medical publication, Dr. Charles Atkins, a White male surgeon at the helm of gynecological medicine, reported a heightened ability among Black women to sustain pain (Cooper Owens 2018). This erroneous claim about the Black body and pain thresholds proliferated throughout nascent medical journals and the healthcare community. Rooted in scientific racism, these findings soon became medical doctrine, and continue to seep into our contemporary medical landscape (Bailey 2017; Browder 2023; Cooper Owens 2018; Maples 2018; Roberts 2012; Schwartz 2006; Washington 2006).

Today, Black women consistently describe decreased autonomy and exposure to racialized stereotypes in obstetric settings. These accounts echo the barbaric, antebellum practices

described by historians. In a recent study published in *Social Science and Medicine,* Altman and colleagues (2019) interviewed 22 Women of Color (12 participants self-identified as Monoracial Black or Multiracial Black) about interactions with health professionals. The women in their sample spoke about wanting to feel involved in obstetric care decisions and sought thorough explanations on available reproductive services. Despite this, one woman described being confused and completely ignored by medical staff after experiencing a uterine rupture. She felt powerless, even though she "pleaded" with her obstetrician for more information (Altman et al. 2019, p.4). Countless other qualitative studies (Adebayo et al. 2022; Chambers et al. 2021, 2023; Davis 2019b; McLemore et al. 2018; Vedam et al. 2019) present similar findings. For example, OjiNjideka Hemphill's (2023) interdisciplinary research team conducted focus groups with 11 Black women from Chicago and documented reduced bodily autonomy and coercion among participants. When obstetricians failed to present a rationale for procedures, such as cesarean sections, women who questioned provider recommendations were denied an explanation or ignored. For some Black women, biased care during pregnancy is perceived as and sometimes even explicitly named, discrimination or racism (Adebayo et al., 2022; Ahmed et al., 2007; Barnett et al., 2022; Chambers et al., 2023; Henderson et al., 2013; Murrell et al., 1996; OjiNjideka Hemphill et al., 2023; Salm Ward et al., 2013). In one focus group study with 29 Black women, participants identified multiple forms of racial discrimination in their prenatal care, ranging from overt discrimination, wherein the provider used racist language, to more covert forms of discrimination, such as innuendos of drug use (Salm Ward et al., 2013).

Given these reports of perceived racial bias, Black women may have reduced confidence in interpersonal connections (i.e. patient provider interactions) and organizations (i.e. the medical industrial complex). Alongside feeling judged and disrespected when treated by White providers

(Altman et al. 2020; Barnett et al. 2022), historic instances of exploitation and experimentation, such as the Tuskegee Syphilis Study and Mississippi Appendectomies, justify Black women's heighted awareness of medical mistrust (Roberts 2017; Washington 2006). Since trust is "a bridge between providers and their patients" (OjiNjideka Hemphill et al. 2023, p.4) Black women want clinicians who recognize the historic denigration of Black bodies. One such way Black women challenge implicit bias is by seeking out racial concordance with health professionals, and when they do, they report feeling safe and more at ease with Providers of Color (Altman et al. 2020; Wade et al. 2023).

Obstetric Racism: Obstetric Violence + Medical Racism

To detail the obstetric trauma often described by Black women, feminist scholars have coined several terms including medical apartheid, birth rape, and birth injustice (Nash 2021). In this chapter I utilize obstetric racism as a conceptual frame to illuminate denigrative treatment in Black women's accounts of patient provider interactions. An amalgam of obstetric violence (a unique form of gendered violence) and medical racism (a form of discriminatory medical behavior influenced by racialized beliefs), the theory of obstetric racism germinated from Davis' (2019b) ethnographic work in the neonatal intensive care unit (Nash 2021). In *Reproductive Injustice: Racism, Pregnancy, and Premature Birth* (2019b), Davis detailed Black mothers' exposure to obstetric racism after experiencing a preterm birth. This construct encompasses seven dimensions: 1) intentionally causing pain, 2) coercion, 3) medical abuse, 4) neglectful, dismissive, and disrespectful treatment, 5) diagnostic lapse, 6) ceremonies of degradation, and 7) racial reconnaissance (Davis 2019a, 2020; van der Waal et al. 2023).

First, by subjecting patients to pain, health professionals may fail to address or mitigate suffering. This dimension of obstetric racism is often tethered to stereotypes about Black bodies,

such as Black women's imperviousness to pain. Reproductive coercion, the second dimension of obstetric racism, can manifest in several forms. Medical staff might pressure a patient into decision-making, or the health professional could execute medical interventions without informed consent. When clinicians inappropriately exert control and domination (i.e. experimenting on patients involuntarily) these actions constitute medical abuse, the third aspect of obstetric racism. Medical professionals who willfully ignore, minimize, or disregard patient's requests for aid engage in the fourth aspect of Davis' theoretical construct. This neglectful, dismissive, or disrespectful treatment can occur alongside or separate from the fifth dimension of obstetric racism, a diagnostic lapse. For instance, when practitioners ignore patient concerns, they can misdiagnosis or fail to diagnosis. Ceremonies of degradation, another dimension of obstetric racism, refers to ritualistic practices that disgrace patients. Consider a healthcare staff member who behaves in a discriminatory manner due to racialized stereotypes (i.e. believing a Black patient is threatening). This might lead to the patient feeling shame or humiliation. The last aspect of obstetric racism, racial reconnaissance, pertains to resistance measures Black women employ to mitigate exposure to racial bias (Davis 2019a, 2020; van der Waal et al. 2023). In this paper, I illuminate all dimensions of obstetric racism in Black women's narratives. As I show, these practices manifest in interpersonal scenarios yet persist due to structural inequities that fail to address implicit bias in medical training (Matthew 2015).

Theorizing White Privilege, Colorblindness, and Racial Ignorance

In my analysis I integrate obstetric racism with theories on colorblindness and racial ignorance to show how White women expressed varying degrees of awareness of White privilege. First, colorblind theory (CBT) addresses contemporary forms of racism (Bonilla-Silva, 2022). In *Racism without Racists*, a well-known and widely cited text, Bonilla-Silva (2022)

draws on the 1997 Social Survey of Attitudes of College Students and the 1998 Detroit Area Survey to document: 1) abstract liberalism, 2) naturalization, 3) cultural racism, and 4) minimization of racism – the four discursive frames of colorblindness. Abstract liberalism suggests everyone has 'equal opportunity' and freedom in decision-making. Next, naturalization emphasizes innate tendencies or preferences to justify racial phenomena (i.e. segregation occurs naturally because individuals from the same racialized group gravitate towards each other). Third, cultural racism uses culturally rooted explanations for racial inequity, foregrounding erroneous assumptions about non-Whites (i.e. Black people come from impoverished backgrounds). Finally, minimization of racism suggests that discriminatory practices have little to no impact on the plight of non-Whites.

Extending Bonilla-Silva's (2022) colorblind racism, Mueller's theory of racial ignorance (TRI) draws attention to processes that support racial unawareness and "White knowledge evasion" (Mueller 2020, p.143). TRI has five tenets, but I only draw attention to one dimension – the epistemology of ignorance (Mills 1997, 2007; Mueller 2020). According to Mueller (2020) TRI conceptualizes ignorance as "practices of knowing and non-knowing" (p.146). Specifically, an epistemology of ignorance highlights practices of obfuscation (i.e. dismissing the surety of racism) to engender misinformed perceptions that maintain extant power dynamics. Although our social world is oversaturated with proof of White supremacy and oppression (Feagin 2013; Mueller 2020), for Whites disinvesting in the oppressive reality of our racially stratified environment produces psychological advantages (DuBois 1935; Mills 1997; Mueller 2020). For instance, a racially ignorant White participant may neglect to make personal connections between White privilege, White supremacy, their identity, and obstetric experiences. In this analysis, I argue that although Whiteness and the privileges that come with it, shaped patient

provider interactions, many of my White participants employed epistemological ignorance and reconfigured colorblind frames.

The Current Study

I contextualize Black and White women's accounts of pregnancy, birth, and postpartum within a unique cultural moment - the Covid-19 pandemic. The pandemic and related shutdowns upended the lives of pregnant women (Ajayi et al. 2021; Davis-Floyd, Gutschow, and Schwartz 2020; Williams, Berkowitz, and Rackin 2022) and likely illuminated the pervasive effect of racism and White supremacy (Khazanchi, Evans, and Marcelin 2020). With one notable exception, few qualitative studies have fully integrated an analysis of racism and White privilege into research on pregnant people's experiences during the pandemic (Chambers et al. 2023). In Chamber and colleagues (2023) work, 34 Black pregnant and recently postpartum birthing people from Fresno, California participated in interviews about racism, the Covid-19 pandemic, family, and maternal healthcare. Mirroring findings from pre-pandemic times (Altman et al., 2019; Benkert and Peters, 2005; McLemore et al., 2018; Mehra et al., 2020; Murrell et al., 1996; OjiNjideka Hemphill et al., 2023; Slaughter-Acey et al., 2019) participants spoke about mistreatment, poor communication, and judgement from health professionals. Building from Chamber and colleagues (2023) research, I juxtapose Black women's narratives to White women's and integrate obstetric racism with colorblind theory (Bonilla-Silva 2022) and the theory of racial ignorance (Mueller 2020). Broadening the racial scope to include Black and White women, allows me to unravel how the pandemic magnified anti-Black and denigrative obstetric care for Black women while obfuscating racial advantages for White women.

Methods

Justification for Research Design

The data for this analysis come from semi-structured interviews with a sample of 35 Black and White women who were pregnant or gave birth during the first two years of the Covid-19 pandemic (March 11, 2020 – March 11, 2022). Feminist sociologists have shown how qualitative interviews can also amplify the voices of minority groups (Hesse-Biber 2017). As a subjugated sociodemographic group, the voices of Black women are often obscured in public discourse (Collins 2000). By using in-depth interviews and a case study approach, I made an intentional methodological decision to highlight the narratives of this historically marginalized group. Moreover, a semi-structured interview allowed greater freedom when engaging with each participant. Rather than restricting the dialogue to a specific set of questions, this approach fostered opportunities for the conversation to naturally evolve and in some cases, even flow into unexpected aspects of the participant's narrative (Hesse-Biber 2017; Holstein and Gubrium 1995). In *The Active Interview*, Holstein and Gubrium (1995) write that interviews are a meaning-making process that involve co-constitutive efforts between the researcher and the respondent. Rather than perceiving the respondent as merely an individual with a "vessel of answers" (1995, p.8) waiting to be uncovered by the researcher, Holstein and Gubrium view the participant as an instrumental agent in the production of knowledge. The interviewee's responses are best conceptualized as a "stock of knowledge" (1995, p.30). This "stock" is dynamic, consistently emerging throughout the interview process, and directly associated with the myriad roles and identities of the respondent.

Despite the notable advantages of a qualitative approach, there are some limitations to employing this type of research design. Qualitative research is limited in its generalizability and due to smaller sample sizes reaching statistical generalizability can be a challenge. However,

qualitative research allows researchers to take synthesized ideas and make them applicable to theoretical concepts (Hesse-Biber 2017; Polit and Beck 2010). Active, in-depth, semi-structured interviews are well-suited to answer the research questions associated with this study. Because qualitative interviews center the narratives of individuals (Hesse-Biber 2017) this methodological approach allowed participants to describe their gestational journey and consider how their social position shaped their pregnancy experience.

Recruitment and Sampling

From August 2020 - February 2023 I recruited women using various social media platforms (*Facebook, Twitter, Instagram*) and snowball sampling techniques. Recruitment fliers indicated that a researcher at Louisiana State University was interested in learning about women's experiences with pregnancy planning, pregnancy, birth, and postpartum, during a global health crisis (see Appendix B). Fliers included a link to a 15-question survey which would determine eligibility for a virtual one-to-two-hour interview. This study was approved by the Institutional Review Board at Louisiana State University prior to the dissemination of any recruitment materials (IRBAM-20-0092; see Appendix D).

A woman was excluded from the study if the pregnancy that occurred during the pandemic did not end in a live birth (i.e. miscarriage, stillbirth, or abortion), and/or if the woman was pregnant or gave birth outside of the specified time frame (March 11, 2020 – March 11, 2022). As I discuss in the next chapter, women who experience pregnancy loss may have unique pregnancy and postpartum experiences. Thus, I excluded these women from the study because their experiences were likely shaped by this stressful event. After individuals completed the qualifying survey, I contacted eligible participants via email and/or telephone to schedule an interview.

Conducting the Interview and the Interview Guide

All interviews were conducted via *Zoom.* Participants were informed about the nature of the study, the minimal risks of participation, and steps to protect the privacy of subjects. Each woman gave verbal consent to proceed with the recorded interview. Although I encouraged all women to turn on their camera, five participants opted to leave their camera off for the interview. Elyse, whose narrative I share in the case study, was one of these participants. Restricted access to facial expressions caused me to focus more on tone, cadence, and inflection. Also, conducting interviews via *Zoom* allowed access to women that were geographically dispersed, reduced travel costs, and has been described positively by participants in qualitative interviews (Archibald et al. 2019; Boland et al. 2022). The semi-structured interview guide (see Appendix C) was divided into seven main sections: 1) Background/Demographics, 2) Becoming Pregnant, 3) Your Pregnancy, 4) Risks, 5) Labor and Birth, 6) Postpartum, and 7) Conclusion. After each interview I wrote memos and revised, for accuracy, each transcript produced by the *Zoom* recording.

Demographics of Participants

Ranging in age from 24-43, the sample included nine women who were still pregnant at the time of the interview and 26 women who had already given birth (see Table 3.1). Twenty-four participants (69%) identified as White and 11 were Black (31%). With respect to relationship status, 32 participants were married to the father of the child born or conceived during the pandemic. Two participants were in cohabitating unions and living with the biological father of the child conceived/born during the health crisis. One participant was single. The sample was highly educated as all participants had a high school degree or higher. Two participants completed some college education and one participant had an associate degree. These three participants were Black women. Thirteen participants graduated from a four-year

university (four were Black; nine were White). Nineteen participants had an advanced graduate degree (three were Black; 16 were White), such as a Master of Science in Nursing (MSN) or Doctor of Philosophy (PhD). The sample was geographically diverse. Fourteen participants lived in California, five participants lived in Louisiana, five participants lived in Indiana, and two participants lived in Tennessee. The following states had one participant: Massachusetts, North Carolina, Colorado, Illinois, Kentucky, Texas, Washington, Nevada, and New Jersey. The nine participants who were pregnant at the time of the interview were past the first trimester. Five of the currently pregnant participants were nulliparous. At the time of the interview, three women who were pregnant had one other biological child and one woman had two prior births. From the 26 women who were postpartum during the interview, 18 participants gave birth to their first child during the pandemic. Seven participants gave birth to their second child and one participant gave birth to her third child. To ensure anonymity I assigned all participants, their children, and spouse pseudonyms.

Table 3.1. Sample Characteristics

Name	Age	Race	Relationship Context	Education	Residence	Pregnancy Status (at interview)	Parity
Deanne	36	White	Married	Bachelors	CA	Postpartum	1
Asha	26	Black	Married	Some college	CA	Postpartum	2
Malorie	29	White	Married	Bachelors	IN	Pregnant	0
Marjorie	33	White	Married	Doctorate	LA	Postpartum	1
Chloe	34	White	Married	Masters	MA	Postpartum	1
Halie	35	White	Married	Bachelors	LA	Postpartum	1
Elizabeth	37	White	Married	Masters	TN	Postpartum	1
Rae	32	White	Married	Masters	NC	Postpartum	1
Alexis	30	White	Married	Bachelors	CA	Pregnant	0
Rachel	37	White	Married	Masters	CA	Postpartum	2
Aubrey	39	White	Married	Doctorate	CO	Postpartum	2
Casey	42	White	Married	Doctorate	LA	Postpartum	2
Avery	25	Black	Single	Some college	CA	Postpartum	1
Charlotte	33	White	Married	Bachelors	IL	Postpartum	2

(table cont'd.)

Name	Age	Race	Relationship Context	Education	Residence	Pregnancy Status (at interview)	Parity
Cynthia	35	White	Married	Doctorate	CA	Pregnant	1
Paige	34	White	Married	Bachelors	IN	Pregnant	1
Naomi	30	White	Married	Bachelors	WA	Pregnant	0
Abigail	29	Black	Single	Masters	IN	Postpartum	1
Robyn	31	Black	Married	Bachelors	CA	Postpartum	1
Ashley	34	White	Married	Masters	KY	Postpartum	1
Maya	31	White	Married	Masters	CA	Postpartum	1
Mystie	35	Black	Married	Bachelors	TX	Postpartum	2
Sallie	43	White	Married	Doctorate	NJ	Postpartum	1
Elyse	29	Black	Married	Associates	IN	Postpartum	1
Kim	36	Afro-Latina	Married	Masters	TN	Pregnant	2
Brittney	31	White	Married	Bachelors	CA	Postpartum	3
Sarah	24	Black	Single	Bachelors	IN	Pregnant	0
Melissa	39	White	Married	Doctorate	CA	Postpartum	1
Erin	36	White	Married	Bachelors	LA	Postpartum	2
Hannah	37	White	Married	Doctorate	LA	Pregnant	1
Erica	29	Black	Married	Bachelors	CA	Postpartum	1
Nicole	29	Black	Married	Masters	CA	Pregnant	0
Jennifer	30	African	Married	Doctorate	CA	Postpartum	1
Olivia	30	Caucasian	Married	Masters	NV	Postpartum	1
Katy	33	Caucasian	Married	Masters	CA	Postpartum	1

Positionality

I am mindful that my experience, during interviews and analysis, was tied to various aspects of my identity: being Black, being a heterosexual cis-gendered woman, being childless, and being a student at an R1 institution in the South. At the onset of each interview, I introduced myself as a doctoral student at Louisiana State University interested in health and reproductive justice. For interviews with participants from Indiana, California, or Louisiana I added my ties to each state. Unless asked I did not openly disclose other information about my identity with participants. My gender presentation and phenotype, however, were likely clear identifiers and undoubtedly shaped the way participants engaged with me.

To help participants feel comfortable I aimed to build rapport early on. Some participants, irrespective of race, were noticeably nervous at first. Amid several interviews, participants asked, "Did I answer your question?" To which I patiently reminded them "There are no right answers." I welcomed breast feeding during the interview. I cried with women as they discussed prior

miscarriages, abortions, and sexual trauma. And I always asked if participants needed a moment after revealing a harrowing aspect of their story. My intent was to cultivate an encouraging, patient environment to help 'set the stage' for race-related questions. Given the sensitive nature of race-related conversations (Hoong Sin 2007; Schaeffers 1980), I intentionally placed these inquires near the end of the interview. This approach allowed ample time to build rapport through the aforementioned strategies. In some interviews accounts of discrimination and privilege emerged organically without prompting from an explicit question. When women addressed specific race-related topics I wondered how an interview might have gone differently if I was not Black? Would a White woman have used another tone, given another response, talked more (or less) about her privilege? Would a Black woman have been as open about her experiences with racial bias? Although I will never know, I am hopeful that my rapport-building tactics created a safe space for participants to give authentic, vulnerable responses.

Needless to say, I conducted these interviews during the Covid-19 pandemic. Misinformation, social isolation, and uncertainty were rampant in my personal life. And I resonated deeply with various aspects of participant's experiences. Living with my 90-year-old, immunocompromised grandmother during the first-wave of the pandemic, I empathized with participants who feared for their family's safety. I laughed cathartically alongside participants who discussed implementing protective bubbles to mitigate risk. Acknowledging the unprecedented nature of our shared experience I invited participants to talk about anything that we hadn't discussed and to ask me questions. Before ending the *Zoom* call, I told participants 'Thank you,' following this salutation with additional gratitude in a subsequent email. Overall, women seemed hopeful that in sharing their story this research would help other pregnant people and families.

Analysis

For my analysis I employed a constructivist grounded theory method (Charmaz 2014). A constructivist grounded theory approach extends grounded theory, developed by Glaser and Strauss (1967) in *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Moving away from the positivist components in grounded theory, a constructivist approach assumes that social reality is multifaceted, unknowable, and shaped by the researcher's social characteristics. According to Charmaz (2014) "subjectivity is inseparable from social existence" (p.14) and the reflexive aspect of constructivist grounded theory is critical since the investigator plays a central role in 'constructing' the research process. Mindful of my social characteristics (discussed in the positionality section above), my coding process consisted of two phases, initial coding and focused coding. After every interview I uploaded all transcripts into Atlas T.I., reading each interview in its entirety. After this I proceeded with the first phase of the coding process, initial coding. Rather than code for types of individuals or specific topics, approaches that can lead to static characterizations, I adopted a constructivist approach which promotes coding based upon action (Charmaz, 2014). To do this I followed Charmaz (2014) and used gerunds during line-by-line coding. I constructed over 350 initial codes related to race, discrimination, privilege, and patient provider interactions. Because the shift to focused coding, the second phase of the coding process, is often non-linear (Charmaz, 2014), in many cases I needed to return to the data and recode my initial codes. During focused coding I synthesized the most frequent codes from line-by-line coding. Alongside my analytic memos I used the focused codes to note any emerging themes. For example, 'experiencing disrespectful treatment' was a prominent theme among Black participants. Specific codes associated with this category included: *anticipating racial bias because of race, being yelled at during labor, recognizing that*

a medical provider minimized her concern, and emphasizing stereotypes about Black women and pain. In the final phase of my analysis, I compared my themes to critical race scholarship and literature from medical sociology. This comparative process helped situate my findings in the broader literature and added significant theoretical support to emerging themes. I complement grounded theory with case study analysis to paint a fuller portrait of obstetric racism. I conduct this analysis from an interpretivist standpoint, meaning I am concerned with the ways I, as a researcher, make sense of the case and the ways my participant perceives her experience (Simons, 2020).

Birthing Through Pandemonium: Voices from a Multi-Racial Cohort

In this chapter I explore dimensions of obstetric racism, White privilege, and patient-provider engagement among Black and White women who were pregnant during the Covid-19 pandemic. Because Black women are disproportionately impacted by racialized stereotypes and biased medical treatment (Rosenthal and Lobel 2011, 2020; Vedam et al. 2019) I over-emphasize their experiences in this chapter. I begin with a case study. I use the condensed narrative of Elyse, a 29-year-old woman from Indiana, to illuminate five aspects of obstetric racism. The trauma, fear, and pain Elyse endured were palpable, even in our virtual conversation. Keenly aware of her Blackness, Elyse's story conveys the individual impact of racism and is reflective of so many Black women in this study, who also experienced neglectful and demeaning obstetric care.

In the larger multi-racial cohort, I draw attention to several themes. I describe how perceptions of racial bias, for Black mothers, and awareness (or lack thereof) of White privilege, for White mothers, shaped interactions with health professionals. Mirroring what other scholars have documented (Adebayo et al., 2022; Ahmed et al., 2007; Barnett et al., 2022; Chambers et

al., 2023; Henderson et al., 2013; Murrell et al., 1996; OjiNjideka Hemphill et al., 2023; Salm Ward et al., 2013), seven Black women highlighted mistreatment and dismissive care, a pattern that many believed was the result of racialized beliefs about the Black body, specifically Black women's thresholds for physical pain. Next, I situate Black women's stories alongside White women, the overwhelming majority of whom detailed attentive, respectful patient provider interactions. And yet, most of these White subjects were completely ignorant or somewhat unaware of how Whiteness contributed to favorable pregnancy and birth experiences. Borrowing from Medina (2013), I categorize nine White women as "White blind" (p.43). These women were ignorant of their racial advantages and completely denied their racial privilege. Another group of eight White women, that I label 'colorblind' explained away their racial advantages by using social class as a discursive proxy. Only one White woman in my sample, adopted an 'awareness of White privilege' standpoint. Finally, as a stark comparison, I show how Black women had to be intentional, purposeful, and careful throughout their pregnancies and births in ways that White women did not. Four Black women in my sample, who notably did not mention discriminatory treatment, emphasized seeking out advocates during birth, and establishing patient provider concordance. After perceiving racial bias during labor one Black woman was hypervigilant in removing White providers from her care team. Although the other six Black women did not mention resistance strategies, the five Black women who employed racial reconnaissance (Davis, 2020) or desired racial concordance with their health provider offer a balanced depiction of this racialized group. In depicting alternative characterizations of Black women, I intentionally portray Black women as more than mere victims of obstetric racism. Rather, these women were purposeful agents who also challenged White supremacy and disrupted oppressive forces in the medical industrial complex.

Using the global pandemic as a contextual backdrop, the stories of the Black and White women in this study occurred alongside an evolving, precarious international health crisis. As I show, this public health emergency magnified perceptions of racial discrimination experienced by Black women and reinforced White supremacy. While millions of lives were lost due to Covid-19-related infections (Centers for Disease Control and Prevention 2024), the ruthless grip that the crisis once had on individuals and families has subsided. In 2021 medical teams, spearheaded by the intellectual ingenuity of Dr. Kizzmekia Corbett - a Black woman and viral immunologist - developed vaccines and saved countless lives (Kamin 2023). However, as you will recall, during the first year of the pandemic, health experts had, at best, a vague understanding of the impact of Covid-19 on pregnant women. Discussed in more detail in my *Journal of Social Issues* publication (Williams et al. 2022) and documented by a host of other scholars (DeYoung and Mangum 2021; Jones et al. 2022; Meaney et al. 2022; Mollard and Wittmaack 2021) pregnant women experienced numerous, multifaceted stressors during the initial waves of the health crisis. The accounts that follow occurred during this tumultuous, unprecedented time. Although I center racism and White privilege in this analysis, uncertainty and risk undergird these narratives and occurred alongside one another in complex ways.

Elyse's Story: Persistent Pain, Undiagnosed Pre-eclampsia, and the "Traumatic Birth Experience from Hell"[3]

I met Elyse, a soft-spoken Black woman with a tiny stature, two months after she gave birth to her first child. Shortly after the winter holidays, we sat across from each other on *Zoom*. Elaine Marie, her daughter, was nestled in her arms. I started our conversation like I did every other interview, asking questions about where she lived, her relationship status, and fertility

[3] For anonymity, I modified all dates and times in Elyse's story.

intentions. But unlike other women whom I had spoken with, Elyse's story began a decade before her pandemic pregnancy.

For years, she endured unrelenting pelvic pain. One physician adjusted her birth control, another recommended pain pills. The proposed remedies were ineffective, and her distress continued. Elyse's gynecologist, a practitioner who monitored her care for five years, repeatedly dismissed her pain. Sex with her husband, John, produced writhing discomfort and sitting down fostered excruciating back pain. With a hint of irritation in her voice, Elyse recounted her experience with gynecological care: "I kept telling my [provider] about the pain that I had all the time. And it was dismissed. [My provider said] 'you're probably always going to have that pain.'"

After many useless recommendations, persistent physical discomfort, and years of emotional suffering, Elyse found an empathetic specialist who listened and validated her concerns. Aside from attentiveness, Elyse did not mention any differences between her new specialist and her former gynecologist. The specialist made two discoveries – Elyse had a double uterus and excessive scar tissue that engulfed her reproductive organs. By medical standards, the diagnosis meant 'borderline infertility.' Although this news was disconcerting, the relief in her voice was visceral. At last, she had a practitioner who invested in her and took her pain seriously.

It was September 14, 2019, seven months before the pandemic, when Elyse had surgery to remove her scar tissue. Pain free for the first time in her adult life, Elyse finally "felt like a person." Nervous, yet hopeful, the surgery was her only chance to become pregnant. Elyse and John were approved to start trying to conceive in the first week of the new year. And they were successful almost immediately. Elyse was pregnant by February 2020. As she reflected on the

moment she realized her family would finally expand, Elyse radiated with excitement and jubilation.

On March 11, 2020, The World Health Organization (WHO) declared the coronavirus a global pandemic (Centers for Disease Control and Prevention 2023a). And the initial fervor surrounding Elyse's first pregnancy quickly dissipated. Her speech slowed when she started recounting the life-altering implications of the pandemic. Her words became deliberate, each syllable now carrying the weight of impending despair and gloom. Elyse was soon overwhelmed with fear and uncertainty and was forced to attend her first prenatal appointment alone. The following month, her grandfather contracted Covid. Tearful, she politely apologized for the quiver that surfaced in her voice. At ten weeks pregnant Elyse described saying her final goodbye to her beloved grandfather, in April, via Zoom. She was one of ten people to attend the socially distant funeral on a spring day in Chicago. While an estimated 9.9 million families lost a loved one from the rampant viral infection (Levine 2023), Elyse's pain was common among Black Americans – the racial group hit the hardest from pandemic-related mortality (Hill and Artiga 2022). Clearly distraught after sharing this tragedy Elyse's silence encapsulated the virtual room. I refused to diminish her grief, so we took a necessary detour from the semi-structured interview questions. I shared fond memories of my grandfather who died six years earlier. Elyse responded graciously. She even chuckled amid her sniffles.

In the midst of this confluence of emotions and stressors Elyse reflected on the precarity of the evolving pandemic. Thankfully, her high-risk pregnancy continued to progress without many complications. But in her final trimester she gained ten pounds rapidly, her ankles swelled to the size of tennis balls, and she noticed intermittent "floaters" in her peripheral vision. Given her symptoms, she believes her obstetrician "slipped up" and missed diagnosing her with pre-

eclampsia. At her next prenatal appointment, Elyse found herself "spread eagle and super pregnant" during an excruciatingly painful cervical check. Sitting across from Elyse actively scribbling down notes, I shut my eyes. My body became tense at the thought of her suffering while laying on a cold, metal exam table with her feet in stirrups at nine-months pregnant.

After the cervical check Elyse tried to reiterate her symptoms and concern for pre-eclampsia with the obstetrician. The provider informed her, "Oh we can't check your blood pressure after you have [a cervical check] because it's going to be crazy high." Elyse knew her body and she knew something was wrong. But once again, she left a medical appointment feeling dispirited, dejected, and dismissed.

When Elyse went into labor, four days later, she initially thought she had Braxton Hicks contractions, so she waited 24 hours before going to the hospital. Once at the hospital, the labor and triage team did not check to confirm whether her water was broken. Medical staff sent Elyse home, even though she was in excruciating pain. Her pain and distress intensified so she returned to the hospital two days later.

When I asked Elyse to tell me her birth story, from beginning to end, she inhaled. She sighed, then groaned – verbal cues that were indicative of the traumatic retelling which was about to unfold. Forty-eight hours after initially presenting to the hospital Elyse was finally admitted. But by then, her blood pressure had skyrocketed. During the early hours of labor Elyse asked medical staff to use a vein finder for IV (intravenous) insertion. Her frustration and annoyance were audible as she told me her incessant requests went unanswered. Nurses continued making attempts to establish an IV, causing more pain. After many unsuccessful attempts, medical professionals belatedly acquiesced to Elyse's request. But the vein finder they acquired was not charged. No one thought to plug the device into an electrical socket or locate

another charged vein finder. With emphasis and purposeful repetition, she remembered nurses who continued to poke, and poke, and poke. Despite continuously articulating her requests, Elyse felt voiceless and powerless throughout this interaction. She believed that providers knowingly contributed to, and exacerbated, her distress by blatantly disregarding her appeal to use a vein finder. Elyse's reality reflects a dimension of obstetric racism (Davis 2019a, 2020) and is likely connected to racialized beliefs regarding Black women's tolerance for pain (Cooper Owens 2018). The insensitive and overtly racist care Elyse, and other Black women, experienced during the pandemic shows how stereotypical perceptions were likely exacerbated amid a crisis.

Eventually, after a seemingly unabashed refusal to attend to Elyse's pleas for pain-relief the nurses established her IV. Medical staff monitored Elyse for several more hours, but her blood pressure kept fluctuating. With a systolic pressure in the 160s[4] the obstetric team's concern intensified. To minimize the risk of a seizure, stroke, organ failure, and death, Elyse received magnesium sulfate (i.e. the 'mag bag') intravenously. Dazed and confused, presumably from the new intervention, Elyse watched helplessly as nurses started to cover her bed rails with extra-thick, foam seizure pads. She couldn't concentrate. She couldn't stay awake. She felt powerless and vulnerable, as if her desires were insignificant. Although relieved to have her husband's presence at bedside, Elyse shared that she wished she had been able to have a doula - an advocate who could "speak up for [her] when she couldn't."

Describing the final moments of labor, Elyse shared that the practitioner she had built rapport with was on vacation. This meant another obstetrician, who she said, was erratic and had a horrible bedside manner would deliver Elaine Marie. When the new obstetrician entered the

[4] According to the Centers for Disease Control and Prevention (2023b) a normal systolic blood pressure is below 120mmHg. Stage 1 hypertension (i.e. high blood pressure) is defined as 130-139mmHg. Stage 2 hypertension is considered anything above 140 mmHg.

birthing room she immediately confronted Elyse about her mask. Protected from the coronavirus, this provider donned a mask and face shield when she walked into Elyse's birth room, but repeatedly demanded Elyse wear a mask during labor. Begrudgingly, Elyse put the disposable piece of cloth over her nose and mouth. In utter disbelief she detailed pushing while the obstetrician kept turning to John and instructing him to make sure the mask remained over her nose. As I scribbled down notes I thought about how deflated and despondent Elyse sounded in this moment. All the elation she exuded earlier, when sharing news about becoming pregnant, was gone. Holding back tears, Elyse spoke: "It was frustrating. For her to keep telling my husband, while I'm pushing our child out, to [help] keep my mask on … Over and over and over." Elyse perceived that empathy and compassion were not a priority for the doctor who was possibly motivated by medical authority and control. Aligned with the medical abuse facet of obstetric racism Elyse's provider may have violated medical privilege when she recruited John. And in addition, by doing this, the provider averted his attention away from comforting Elyse and focused on surveilling Elyse's mask compliance.

In a purposeful moment of defiance and resistance, Elyse ripped off her mask. Chuckling cathartically, Elyse told me it was awkward in the birth room after this, and the obstetrician was furious, but she didn't care. She was free from the suffocating mask. She told me that she "couldn't breathe with [that] stupid thing on" and that demanding a woman to wear a mask while laboring was nonsensical.

Twenty-four hours after her admission and three days after initially going to the hospital for pain, Elyse finally gave birth to Elaine Marie at 06:51am on October 14th. Before detailing the events that sparked her postpartum trauma Elyse took a deep inhale. She paused momentarily, audibly exhaling a deep long breath. Twelve hours after birth, as the effects of the

mag bag began to subside, Elyse discovered her hands were covered in blood. She was still laying in placental expulsion and fetal membranes (otherwise known as afterbirth). Surrounded by a massive, spongy, dark maroon disc of blood vessels and enveloped in the musty odor of afterbirth, nurses were constantly in and out of Elyse's room. Yet no one cleaned her up, she laid helpless, covered in grotesque bodily fluids. Elyse reflected:

> I would not even treat a dog like that, but they treated me like that, and I just had a baby … how do you let someone lay there like that. That just doesn't make sense to me … I remember telling [my husband], I'm scared. There were so many times in that hospital I did not feel like I was going to even make it out alive. The lack of care that I was receiving. The lack of empathy. The lack of everything. I just didn't feel like I was ever going to make it.

Dehumanized and dejected, Elyse left the hospital three days later. She had a healthy newborn and an unexpected prescription to manage high blood pressure. Elyse's new prescription is characteristic of what Davis (2019a, 2020) calls a diagnostic lapse, another dimension of her theory of obstetric racism. Recall the prior chapter, where I presented a compelling body of scholarship which documented worse maternal and infant health outcomes for Black mothers (Bediako et al. 2015; Bryant et al. 2010; Creanga et al. 2014; Howland et al. 2019; Johnson et al. 2023; Leonard, Main, Scott, et al. 2019). To explain these disparities some scholars bring attention to delayed- or under-utilization of prenatal and preventative services (Bengiamin, Capitman, and Ruwe 2010; Bryant et al. 2010; Sparks 2009; Walford et al. 2011). While timely, affordable healthcare can impact well-being, access to health services is profoundly shaped by macro-level factors (Feagin and Bennefield 2014; Gee and Ford 2011; Williams and Collins 2001). In this story Elyse not only attended every appointment, on time, she did so during a catastrophic pandemic. If the medical industrial complex is imbued with racism, health professionals who encourage Elyse and other Black women to initiate prenatal care offer a temporary,

individualistic solution to an enduring, structural concern. If Elyse's initial concerns were taken seriously during the prenatal visit, she might have avoided the blood pressure prescription. Once admitted to the labor and birthing unit, medical staff scrambled to address this elevated pressure, which likely went undiagnosed and could have been addressed earlier.

By now we were over an hour into the interview and the third member of our conversation became restless. Fairly quiet until this point, Elaine Marie started to whimper. In between baby gurgles, Elyse patted her daughter on the back and transitioned to sharing her postpartum journey. Once home from the hospital and overcome with emotion Elyse cried profusely in the shower, vigorously scrubbing away the remnants of afterbirth and the dried blood stuck to her skin. Reflecting on the "trauma that happened in the hospital, the disrespect, the dehumanization … and the trash bedside manner," her teardrops poured into the drain along with the shower water. She elongated each vowel when she spoke about crying over, and over, and over, and over again. Mulling over her recent trauma and consumed by postpartum hormones, I imagined her rocking back and forth with metronomic precision. For 30 minutes, on her first night home as new mother, she bawled in the bathroom.

Complicating the transition to parenthood Elyse also endured agonizing postpartum blood clots and moderately severe breast engorgement. Her nipples were chapped and dry. Her breasts were constantly sore and throbbing. For two hours a lactation consultant massaged her breasts while milk seeped through her clothing and down her armpit. To make matters worse, two weeks postpartum Elyse discovered her parents were divorcing. With these stressors melded together, she couldn't distinguish postpartum depression from

"regular depression." Analogous with scholarship on the psychological challenges faced by this unique cohort of pregnant women, stressors from pandemic-related disruptions likely exacerbated Elyse's hardships. Swaths of pregnant people in the United States, reported increased stress, fear, anxiety, grief, uncertainty, reduced motivation (Ahlers-Schmidt et al., 2020; DeYoung and Mangum, 2021; Javaid et al., 2021; Moyer et al., 2020) and "waves of depression" (Kinser et al., 2022, p.5) throughout the health crisis.

Yet, Elyse was acutely aware that everything she had experienced during her pre-pregnancy, pregnancy, birth, and postpartum care was also inextricably shaped by obstetric racism. She sought support from a therapist to help her process said emotions and fortunately, her family provided her assistance and relief.

Then, during her first postpartum check-up six weeks later, Elyse encountered another well-documented property of obstetric racism, reproductive coercion. This dimension of obstetric racism occurs when medical providers bully patients into decision-making. Because of her earlier experiences with her double uterus and not wanting to endure hormonal side effects, Elyse made the decision to forgo LARCs (long-acting reversible contraceptives) prior to the appointment. However, her obstetrician kept "pushing birth control and pushing birth control." She felt trapped and coerced at that moment, but Elyse spoke with conviction. She told her provider: "I don't want to be on anything. That's just not for me. I don't like how I feel on [birth control]." Despite her decision, the provider remained adamant. Mid-sentence she paused to collect her thoughts and then continued. After repeatedly explaining her rationale to the obstetrician and reminding the physician of her medical history, he had little recollection of her double uterus. Elyse concluded that the physician hadn't bothered to read her chart and was

oblivious to her situation because she was a Black woman. Leaving the doctor feeling silenced, vulnerable, and powerless, once again, Elyse's story provides contemporary empirical evidence of how the historic and ongoing legacy of reproductive coercion threatens Black women's autonomy at every level of reproductive care.

(Not) Recognizing Salience of Racialized Identity

"Maybe If I Was White": Contextualizing Black Women's Experiences with Racialized Beliefs About Black Bodies

More than half of the Black women in the larger multi-racial cohort echoed Elyse's experience with denigrative care. Anti-Blackness permeated so many of their stories, in ways strikingly reminiscent of the inhumane practices experienced by Black women during the antebellum era (Cooper Owens 2018; Washington 2006). Historically, medical journals were imbued with anti-Blackness and scientific racism (Cooper Owens 2018). In these texts, the Black female body was considered a "medical superbody" (Cooper Owens 2018, p.7) and Black women were characterized as inferior, hypersexual, lascivious, and impervious to pain. Amid chattel slavery, controlling images also emerged to justify the continued abuse of enslaved Black women (Collins 2000). White slave owners raped and mutilated Black bodies for economic gain then rationalized this behavior by portraying Black women as "wild [and] unstrained" (Collins 2000, p.56). According to Collins' (2000) Black feminist perspective, controlling images obscure actual representations of Blackness by comingling fact and fiction. Seven Black participants in my sample detailed harmful stereotypes about Black women's pain thresholds, neglectful treatment by medical professionals, and other fallacious racialized beliefs, connecting their experiences to controlling images of Black women's bodies.

When I interviewed Abigail, she was 29 and had just given birth to her son, Kaden. It was December in Indiana and she appeared warm and cozy, wearing a black fleece jacket. Her jet-

black hair was pulled into a bun with loose curls bouncing atop her head when she moved. Abigail and I grew up together so when I texted her about participating in research regarding pregnancy during a pandemic she readily agreed.

I began by asking Abigail how far along she was in her pregnancy in March 2020. Her eyes jotted upwards, as if counting back the weeks in her head. Since Kaden was conceived in November 2019, she estimated being three-to-four months at the start of the pandemic. We transitioned to talking about the prenatal services she utilized and received a welcome interruption when Abigail's mother walked into the room with Kaden. Not even six-months old yet, Kaden had enough hair for a thin mohawk. He cooed a little but was otherwise uninterested in engaging with the random stranger on the other side of the virtual call. After struggling to shift our focus from the baby back to the interview, we eventually regained our composure and continued the conversation.

For convenience Abigail switched to a different obstetrician, in a neighboring city, during her third trimester. The playful tone Abigail had when talking to her son shifted. She hesitated, pausing briefly after every five-to-six words. Towards the end of her pregnancy, while at the hospital with her new obstetrician, she perceived inattention towards her needs. Four days prior to birth she began to feel, in her words, "leaking." After describing her symptoms to her obstetrician, Abigail felt ignored and dismissed. Although her first pregnancy, Abigail could distinguish between the visceral feeling of "urinating on [herself]" and "randomly leaking fluid." Rolling her eyes in disgust, Abigail believed the provider minimized her concerns and sent her back to work - where she continued to leak fluid for three more days. Initially, Abigail was reluctant to "pull the race card," but eventually rationalized that she was ignored due to racial bias. With passion and vigor Abigail shared how she believed that anti-Blackness and Black

stereotypes likely motivated this neglectful treatment, since "doctors feel Black patients can endure more pain than [their] White counterparts."

Robyn, a Black woman, museum curator, and art-enthusiast echoed Abigail. The dark chocolate melanin of the 31-year-old was in stark contrast to the off-white curtains which were dangling behind her in the living room. Her bronze tortoiseshell glasses rested slightly above a raised beauty-mark on her nose. In gold hoop earrings and spaghetti straps, Robyn told me about the agonizing episodic pain she endured while in labor. "Because the lady … messed up" with the first epidural, she required a second anesthetic. Robyn was forcefully held down by a nurse as she screamed out in pain, while her husband was told to "sit down and watch." Animated and expressive, Robyn liked to punctuate her words with hand gestures. She had a habit of leaning in towards the computer screen when she wanted to accentuate her point. Bringing to mind the horrific interaction when the nursing staff gave her a peculiar look, she tilted forward. She appeared deeply disturbed and described, "Scream[ing] out in pain, they would look at me like, 'why are you screaming … you can take this.'" Expected to remain calm and compliant, even during birth, Robyn did not adhere to gender normative behavior (Martin 2003). Amid the distress and pain of childbirth women are socialized to continue to do femininity during labor. As Martin (2003) succinctly notes women are supposed to, "give birth like a girl," be polite, submissive, and selfless. For Robyn, these gendered expectations were complicated by racialized stereotypes. Akin to Abigail, Robyn attributed her dismissive care to anti-Blackness and stereotypes about Black women's higher pain thresholds. Robyn heard from others that, "Nurses offered people that are not People of Color other alternatives that don't have as much pain." Leaning in closer to the screen she continued, "I have no idea what would have been different if I

were not Black. But I know how I felt when I screamed out in pain, and they were [not] expecting it."

I sat on a *Zoom* call with Sarah, a single Black woman from Indiana, a day before New Year's Eve. In two months, Sarah would welcome her son into the world. She seemed thrilled about expanding her family but also spoke in a sentimental manner. Discursively employing a "reproductive careers" framework (Johnson et al. 2018, p.642), (I discuss this perspective in more detail in the next chapter) Sarah's current pregnancy was tightly cohered to prior gestational experiences. With two prior miscarriages, she told me how challenging it was to fully accept her pandemic pregnancy. Her words seemed peppered with grief. For months she was in denial of her present reality. Consequently, she delayed putting together her "baby shower committee" or sharing news with extended family about her future son. At one point in our conversation her somber tone over-saturated the atmosphere and I gently reminded her to utilize the mental health resources listed on the consent form. As Sarah continued to share, I quickly realized that the distress she felt from pregnancy losses were exacerbated by pandemic- and racism-related stressors.

Eight months pregnant at the time of our interview, Sarah discussed expectations for labor and birth rather than actual experiences. She anticipated exposure to racial stereotypes and disrespectful care since her birth would occur at a predominantly White hospital. She offered perceptive comments about being a Black woman and stereotypes about Black women's bodies:

> Being in the hospital that's when things come to the forefront when it comes to race. I'm going to a hospital that is predominantly White. And I have a higher chance of all my providers being White. So, I don't know how well-versed people [will be] in the Black community, especially if they are White and naïve to situations. They don't know my culture. They don't know my background. They automatically assume things … so they might go in with this stereotypical notion.

Sarah's comments show how unaddressed implicit biases likely increase Black women's exposure to neglectful treatment (Matthew 2015). Further, the looming threat of contracting Covid deterred some women from birthing in a hospital. While "cracks in the perinatal healthcare system" (Kinser et al. 2022, p.6) existed long before Covid, in the early waves of the pandemic these spaces were paradoxically viewed as fraught with additional risk and danger. Compounding Sarah's fear of giving birth in a "White hospital" was the reality of enduring birth in a White "covid hospital" (De Freytas-Tamura 2020, p.A14).

Asha, another Black woman who spoke of discriminatory care, was one of the first participants I interviewed in 2020. Her story also elucidates a degradation ceremony, an additional aspect of obstetric racism. Born in Delaware but currently living on the West Coast with her husband and two children, Asha joined me for a virtual call at three-months postpartum. In shoulder-length dreadlocks and a black collar shirt with quarter-sized gold buttons, this 26-year-old, stay-at-home mom looked poised and polished. After Asha unmuted herself, I could hear her oldest child, Raven, playing with her dad in the background.

Although Asha experienced the first eight months of pregnancy before the pandemic, with her history of chronic depression and anxiety, she described mental health challenges throughout her entire gestational journey. In a defeated tone, she described missing several routine lab appointments, in her third trimester, due to debilitating anxiety. When she arrived at her next prenatal appointment, she felt humiliated by the healthcare worker. Asha explained, "Maybe it's my own perception but I felt like [the provider] was thinking I was irresponsible," after missing the labs. Perceiving a judgmental tone during the exchange Asha proceeded to mimic the provider with neck-rolls and sharp hand gestures. She continued:

> [The provider told me] … well you missed some of your labs and because I don't have that information, I don't know what's really going on with you. Anything

> could be going on with your baby. It was very tense. The whole interaction felt really negative. I already felt dumb, and she made it feel like the end of the world.

Leaving that appointment, Asha told me she was consumed with shame and guilt, emotions possibly compounded by the unpleasant patient provider interaction. I thought to myself how easy it was for me to add mental health resources on the consent form, and to share them with participants during my interviews. I sympathized with Asha who perceived disapproval from the health professional and encouraged her to reach out to a mental health hotline. When I asked Asha to expound on her feelings, she connected the ceremony of degradation (Davis 2020) to racialized stereotypes. She perceived providers as "short, snippy, and not wanting to dig any deeper into [her situation]," repeating sentiments from the other Black women in this study. Asha continued, "anything that was negative it was more of a this 'young, Black girl [who is] pregnant type of thing.'" Even at 26-years-old, the nurse seemingly perceived that Asha was a teen mother and likely subjected her to stigmatized beliefs which pathologize Women of Color in this socially constructed age category (Chambers and Erausquin 2018; Geronimus 2003). Negative views about 'young' motherhood might have exacerbated any disparaging comments or perception held by the nurse about Black women.

Analogous to Asha, Jennifer, a Black lawyer and recently married first-time mother spoke about experiencing racial bias during her postpartum care. At the height of the pandemic Jennifer resigned from working at a law firm in San Francisco, and soon after became self-employed. Her new law firm, which she runs and operates, was thriving. Because Jennifer and I met in college there was familiarity from the start of our conversation. When she asked whether she should provide 'yes or no' answers, I joked about the difference between today's conversation and taking the LSAT (Law School Admissions Test) – the exam I remembered her feverishly studying for during our undergraduate journey.

One hour into our two-hour conversation she began to detail her birth story. After enduring a lengthy hospital birth, she was profusely monitored by nurses. Jennifer shared that she felt "disrespected" by the hyper-surveillance in postpartum. She described the medical staff as hovering, and persistently coming in and out of her room, which Jennifer perceived as a total "disregard" for her recovery. Some first-time mothers might want this extra attention from providers, but Jennifer found this type of care overwhelming. She was frustrated with the hyper-surveillance and what she perceived as anti-Black discrimination. Jennifer candidly wondered, "maybe if I was White, maybe I would have got a higher quality of care." Jennifer imagined that White mothers received more respectful and attentive care. As I detail in the next section, her assumptions are not unfounded. When viewed through a symbolic interactionist lens (Blumer 1969; Mead 1934), Jennifer's perception of her care reveals how social location, cultural and historical norms shape individual meanings of obstetric care (Downe et al. 2018; Zadoroznyj 1999). Also, news about racism contributing to higher risks of Black maternal/infant mortality (Taylor 2021; Timothy 2019) proliferated prior to and during the pandemic. These reports may have been at the forefront of Jennifer's mind. The meanings that Black women construct about their hospital births are inextricably intertwined with these contemporary journalistic accounts of obstetric racism and the sordid history of surveillance tactics used by enslavers in the antebellum era (Browne 2015).

"As in being White:" Variation in White Women's Awareness of White Privilege

Among the White mothers with whom I spoke, three-fourths (18 out of 24) described considerate, timely, and respectful obstetric care. This attentive care coincided with a moment when uncertainty and misinformation were rampant. Labeled an "infodemic" (Zarocostas 2020, p.676) by health professionals the American public was bombarded with conflicting media and

people were unable to distinguish between pandemic-related facts and myths. Changes in hospital protocols and prenatal appointments also upended pregnant women's lives. Although compliant with health guidelines, these disruptions led many pregnant people to feel dissatisfied with patient provider communication (Barnett et al. 2022; Javaid et al. 2021). However, against this backdrop of uncertainty, the White women in my study felt valued and pleasantly recalled how obstetricians quickly addressed requests for more pain medicine, let them make autonomous decisions, thoroughly explained their rationale for procedures, and helped with navigating pandemic stressors.

All the Black women in my sample possessed intricate awareness of how negative perceptions about Blackness might have impacted their care. Contrarily, awareness of White privilege varied among White participants. I constructed a typology of awareness among the White women and divided them into three categories: 'White blind,' 'colorblind,' or 'awareness of White privilege.' I categorized nine women who completely denied any significance of Whiteness, White privilege, or racial advantage as 'White blind.' I labeled eight women who foregrounded class or occupational advantages, rather than racial privilege, as 'colorblind.' From the remaining women, only one White participant acknowledged complete awareness of her White privilege.

White Blind. Consistent with "White blindness" (Medina 2013, p.43), nine White women were oblivious to how White privilege shaped their pregnancy and birth experiences. Throughout our conversation these women actively ignored the salience of their skin tone. While colorblindness can refer to an inability to acknowledge the discrimination of non-Whites or People of Color, White blindness – a specific aspect of White ignorance – refers to a failure to perceive White as a

color. In essence White blindness accounts for a lack of "racial self-knowledge" (Medina 2013, p.43).

The scope of White blindness was particularly apparent in White women who utilized assisted reproductive technology. In my sample, only one Black woman used IVF (in vitro fertilization). Contrarily, five White respondents used IVF or oral fertility medication. As pathways to parenthood are stratified across race, class, and sexuality (Colen 1995), cis-gender, heterosexual, White women typically have more access to reproductive services, relative to their minoritized counterparts (Galic et al. 2021). Fertility treatments are cost-prohibitive for many families since one IVF treatment can cost thousands of dollars (Teoh and Maheshwari 2014). Financial barriers may occlude Black and low-income women from accessing assisted reproductive technology (Colen 1995) and structural oppression, such as obstetric racism, might deter Black women from engaging with traditional forms of medical care (Davis 2020). Even when treatment is accessible Black women are more likely to experience challenges getting IVF appointments, securing transportation to these appointments, and paying for treatment (Galic et al. 2021). Perhaps this explains why only one of the 11 Black women in my sample used any form of assisted reproductive technology. Ashley and Paige were two IVF users who I labeled as White blind. Ignoring their racial advantages both women spoke openly about respectful medical care. Access to fertility treatment was a central component of their narratives yet these women neglected to consider how Whiteness helped them utilize this racially stratified service.

For three years, Ashley, 34, attempted to conceive 'naturally.' In July 2019 she contacted a fertility specialist in a neighboring state and started taking oral fertility medication. To her chagrin, the oral prescription was "not working." Dejected and reluctant, Ashley and her husband made the four-hour drive from Kentucky, where she lived, to Tennessee to try injectable

medication. The new medication was unnecessary. Ashley discovered, during this visit in January 2020, she was pregnant. She described an uncomplicated pregnancy and her treatment during labor and birth was "really good." Ashley emphasized an attentive obstetric care team who ensured her "pain was under control" and "made sure [she] had everything [she] needed." To pursue consultations with fertility specialists in neighboring states, Ashley's social position likely offered her the social and financial capital to travel for treatment. But ignorant of her advantages, this fully White blind woman failed to recognize respectable medical care and access to advanced fertility services as a privilege.

When directly asked about the role race played in her pregnancy she offered a succinct answer, "I don't think [race] did." Ashley's succinct response aligns with the silent tactic often deployed by Whites to evade interracial dialogue. As suggested by an epistemology of ignorance (Mills 1997, 2007), White silence (or in Ashley's case succinctness) can function to mitigate being exposed as ignorant to White supremacy (Mueller 2018; Steinberg 2007). The brevity of her response could also pertain to the 'sensitive' nature of the question. That is, explicit questions about race, particularly when asked by a Black researcher to a White participant, may provoke socially desired responses (Hoong Sin 2007). Because race (of the researcher and the participant) can impact the interview environment, it is plausible that my Blackness engendered discomfort in pursuing inter-racial dialogue. Rather than perceiving my social location as a hindrance, qualitative studies suggest viewing the inter-racial dynamic as methodologically beneficial and a unique component of the interview (Reich 2021). Given this, I intentionally refrained from probing more about race and regard the absence of dialogue from Ashley as a significant aspect of our conversation.

Nested between plush couch cushions Paige, a 34-year-old White woman, whose dark red nail polish matched her sofa, spoke about using IVF twice. She also evaded any notion of how White privilege shaped her fertility outcomes and reproductive experiences. When asked to consider the impact of her race Paige sought clarification and then looked away from the computer screen. Possibly confused, or taken aback, by the question she asked, "As in being White?" She proceeded, "I don't know … I would not say [race] matters." Akin to Ashley, this blatant denial underestimated how Whiteness afforded Paige systemic advantages that made IVF attainable.

Paige's narrative continued to unfold. She wanted four children initially, but experienced infertility challenges with her first son. Turning to IVF, Paige and Gabe, her husband, resolved to be "grateful for whatever they were blessed with." Their oldest son Ryan was one of two fresh embryo transfers. The child conceived during the pandemic was Paige's second embryo. When we spoke, Paige was 23-weeks pregnant with her second child. After numerous complications she really hoped to make it to 30-weeks. Offering details on these complications, Paige's "blood pressure started to go up a little bit" in the final weeks of her first pregnancy. Given this medical history, and the use of IVF with her current pregnancy, maternal-fetal experts were monitoring her very closely. Scratching her face, then pushing back her dark-brown hair, Paige expressed being deeply worried by the additional monitoring with this pregnancy since she "did not see the maternal-fetal department at all," with her first child. Paige shared her concern with her physician. But according to her provider "hypertension, IVF patients, and [being] African American" were risk factors for additional testing. As a White, IVF patient Paige reasoned that risky pregnancy experiences, "don't discriminate" since her pregnancy was just as risky as an African American woman's. She rationalized, "I don't think

race has played any part in [my experience] and I don't think you could put a rhyme or reason to" why certain groups are more at-risk for pregnancy complications than others. Paige's account illuminates how White women can use racial ignorance to make meanings of their reproductive experiences. When she says, the health risks associated with IVF were equivalent to the risk of death commonly faced by Black women, she completely obscures how Whiteness shaped her experience and how structural forces such as obstetric racism shape pregnancy and birth outcomes.

Finally, Maya, 31, lived with her husband in a seaside community that is nestled between Venice Beach and Los Angeles International Airport. She provided a unique response that blended elements of White blindness and colorblindness. Speaking in a high-pitched tone from her home office Maya's newborn daughter sat comfortably in an easy-wrap baby carrier. Her newborn had thick, dark-brown hair that bobbed in-and-out of the screen throughout our conversation. With Maya's graduate-level training in sociology, we immediately bonded over our shared educational background. Two weeks before "everything shut down" in Southern California, Maya unexpectedly discovered she was pregnant with her first child. After a relatively uncomplicated pregnancy, Maya had an induction planned for early November 2020. Throughout labor and birth, she experienced "perfectly great" care and felt "listened to." She was never "pressured to do anything" and was asked by the healthcare team about her preferences. Initially exposing her White blindness, Maya reasoned that her Whiteness "did not impact anything" related to these positive interactions. Rocking her baby back and forth, as we continued talking, her awareness of White privilege fluctuated. Maya then reasoned "other races have clearly documented impacts of race on their experience with health care" which "meant that I had better experiences than others." Using a typical colorblind strategy which Bonilla-Silva

(2022) describes as the "yes or no" (p. 112) approach Maya's story conveyed ambiguity rather than a straightforward denunciation of discrimination. Relative to the Black women in this study who perceived dehumanizing, neglectful care, the White blind participants routinely shared birth stories which invoked comfort, safety, and autonomy. These favorable experiences were likely tethered to White dominance which permeates our social world. Yet, White blind women eclipsed their White privilege by either remaining silent or vacillating between awareness of White advantage and racial ignorance.

Colorblind. Eight White women credited their socioeconomic background or occupation for "wonderful" and "supportive" interactions with providers. Sallie, Melissa, and Brittney were among this group. When discussing privilege, these women reconfigured discursive frames of colorblindness to focus on aspects of their social class, rather than emphasizing Whiteness as an advantage.

Consider Melissa, a White woman with brunette hair who worked as a physician during the pandemic. She gave birth in California but when we spoke she had permanently relocated, with her husband and five-month-old daughter, to Peru. Melissa, at first, denied racial advantages from Whiteness stating, "I don't know if it's necessarily race." As a physician (although not an obstetrician) she emphasized her individual professional accomplishments as the reason for her privileged care. Surrounded by blankets and pillows Melissa leaned back on her ashen-colored headboard and told me she believed her occupation "comes with a certain kind of socioeconomic status" which "gave me more say in the way that things happen." Attaching her privilege to a high-class position and cultural assumptions about individuals in this social stratum, Melissa emphasized, "It's more multifactorial than being a White person. They listened to me more. You can't separate it out because I'm a White doctor who has money according to how people see

me." Melissa focused on positive beliefs about her academic and professional achievements, perhaps even leveraging her cultural capital to rationalize her attentive care. This standpoint obfuscates White privilege and shifts the focus to other social characteristics (i.e. occupation and income).

During my conversation with Sallie, a White woman from New Jersey, she also detailed positive experiences with providers. With her hair pulled back in a ponytail, wearing minimal make-up, I spoke with Sallie a few days after Christmas. Surrounded by holiday decorations and a 40-inch flat-screen television Sallie began her story. At 43-years-old, she described using in vitro fertilization (IVF) for the pregnancy that occurred during the pandemic. Fortunately for Sallie "health insurance covered a lot of [the] costs" associated with IVF. A brand-new women's and birth center opened near her two months prior to giving birth. To her, the proximity to this facility was a privilege which allowed her to "readily access health care." Sallie also noted "very supportive" providers who were "extremely helpful" and "listened to any concerns." Akin to Melissa, Sallie downplays the cultural supremacy of Whiteness and racism. Structural factors, such as residential segregation, can contribute to differential access to health services (Williams and Collins 2001) and might have indirectly impacted Sallie's experience. But Sallie connects her affirming, accessible care to class and geographic advantages which overshadows the potential influence of meta power determinants.

Lastly, I interviewed Brittney during her extended leave-of-absence from work as an elementary school teacher. Her narrative illustrates how White privilege during patient provider interactions can produce psychological advantages. This 31-year-old White woman lives with her husband of seven years and her three children on two-acres of property about an hour northeast of Sacramento, California. After posting about my research on social media, Brittney, a

former co-worker, messaged me about wanting to share her experience. When we connected virtually several weeks later, she wore dainty pearl earrings with thick mascara covering every eyelash on her lower lid. There was a hint of nostalgia in our greeting. Swiveling back-and-forth in a black leather chair, Brittney started to detail her pandemic pregnancy.

After trying to conceive for five months, on a typical Thursday afternoon in March, Brittney noticed a faint blue line on her at-home pregnancy test. Skeptical of the inconclusive results she went to work, per her usual routine, and came back home. The next day, Friday the 13th, her school sent teachers and students home to 'shelter in place,' trying to prevent further diffusion of the rapidly spreading infection. Brittney laughed as she thought back to the unlucky, superstitious perceptions surrounding that day. With fewer distractions from work, she had ample time to consume pandemic-related news about "Texas, Florida, and Arizona exploding" with Covid cases.

By August 2020, now in her second trimester, Brittney began to process the unimaginable – she would return to in-person teaching amid a catastrophic health crisis. She told me with conviction, "I could not get over the fact that I would be required to teach in a classroom with a bunch of kids that would give me Covid and hurt my baby." Anxiously yearning to relieve her stressors and protect her baby's health, Brittney concluded that she desperately needed a work exemption for the next term. With support from her supervisor, a recommendation from her therapist, and a medical note from her obstetrician Brittney was released from teaching responsibilities for the upcoming school year. Her voice was filled with relief and gratitude as she expressed:

> Luckily things started to align, and I was able to get that doctor's note. Which kept my insurance, which kept my job. The school was very supportive and helped to make sure I got out right away and took care of my classes. Once all that happened, and I was officially signed out I felt so much better.

Referencing her health insurance, Brittney's comment elucidates racial disparities in access to care, specifically medical coverage. Relative to White Americans, Black Americans are more likely to combat cost-related obstacles to medical care (Riley, Hayes, and Ryan 2016), and despite recent expansions in healthcare, are disproportionately uninsured (Young 2020). When I explicitly asked Brittney a race-related question later in the interview she recounted vocational and class privilege, rather than White privilege. With uncertainty emanating from her tone Brittney shared:

> Um, I know I'm privileged that I have my own job and work. My husband and I both have good paying jobs, and because of that I get the care that I need. If I don't feel comfortable going to work, I can reach out and say that … I've literally been off work for ten months now and I have had very little change in my paycheck.

Brittney's response fully overshadowed the superiority of Whiteness which likely permeated conversations with her obstetrician and therapist. Like many women who experienced pregnancy during the pandemic, Brittney was inundated with co-occurring stressors. Voicing her concerns, Brittney's obstetrician supported and validated her rationale to take a leave of absence. Then, in a presumably cooperative, sympathetic, and supportive manner the provider helped her navigate the bureaucratic process by facilitating a referral to mental health services. With a trio of social support (her obstetrician, therapist, and employer) Brittney was able to reduce anxiety from work responsibilities. But rather than acknowledging the likely influence of her skin color for this positive outcome, she credited her "job and work" for the stress-reducing measures. Brittney's response is similar to other White women who spoke of favorable obstetric experiences, by representing themselves as economically privileged.

Awareness of White Privilege. As mentioned previously, I only categorized one White woman as fully aware of White privilege. I spoke with Hannah, a 37-year-old White woman living in the Southeast with her daughter, husband, and pets. Highly educated with a graduate degree in the social sciences, Hannah considered socioeconomic status (SES) a significant component of her gestational experience. But Hannah did not obscure her racial advantages. Rather she seamlessly expressed awareness of her class and racial privilege. She described her perspective in detail:

> I was taken so seriously and taken in so quickly partially because of my race. The doctor will talk to me more frankly and openly … She tells me why. Because of my race and my socioeconomic status my doctor is very candid with me. That makes me feel comfortable and listened to. Like we're having a conversation between equals. Which makes me trust what she's saying and her trust me more. I think that race and class both play into it and make it so I had a better experience … I can't imagine what it would be like to be another race or ethnicity but I'm sure things would be very different. I think my relationship with my doctors make it so they want to do things for me. Part of that is because of how I look and part of that is because of my socioeconomic status.

As Hannah's account reveals, awareness of White privilege means clearly recognizing how skin color affords certain advantages. Although some participants were not asked directly about the relationship between race and their gestational experience, no other White participant described privilege this explicitly. Hannah's description is an outlier that also poses important questions about educational background. As an educated White woman with training in the social sciences it is plausible that Hannah's work duties over-exposed her to texts and conversations about race relations. Nonetheless, that I did not find support for 'awareness of White privilege' among Hannah's counterparts (i.e. other highly educated White women), this might indicate a willful ignorance to remain 'blind.' Moreover, during the summer of 2020 (when some of these interviews took place) our social environment was saturated with evidence of racial injustice. Some White women may have dismissed the surety of White privilege to cope with pandemic-stressors, however, without an explicit rejection of White supremacy, these meta

power dynamics are obscured. Consistent with Hannah's account and her awareness of White privilege, Whiteness creates opportunities to acquire reproductive services and feel respected by medical professionals. Although Hannah does not share details about her provider's social location, she felt like an 'equal' with them. As I detail below, Black women unapologetically sought out Black health professionals or Providers of Color to establish the same degree of trust and candor.

Expressing Racial Concordance and Employing Racial Reconnaissance

"I Don't Want That Nurse:" Black Women Disrupting Obstetric Racism by Desiring Providers of Color

Women who experienced pregnancy during the first two years of the Covid-19 pandemic faced extraordinary disruptions in their maternal care (Barnett et al., 2022; Javaid et al., 2021; Kinser et al., 2022). To exert autonomy during a time of uncertainty, chaos, and mental adversity, five Black women emphasized the importance of having a practitioner who was a Person of Color (POC). Notably, four of these Black women did not mention exposure to racialized stereotypes during their interview. Akin to the host of studies that document the importance of patient provider concordance across race for patient satisfaction (LaVeist and Nuru-Jeter 2002; Malat and van Ryn 2005; Wade et al. 2023) Black women were very intentional about having a Person of Color (POC) provider. Disrupting White supremacy in seemingly minor ways, the strategies employed by these Black women are analogous to historical instances of resistance. Consider the enslaved Black women who ran away from plantations, endured physical abuse, and in extreme scenarios performed infanticide to garner bodily autonomy and take back control over their reproductive capacities (Roberts, 2017). In this study, Black women were seemingly acutely aware of the increased likelihood of discriminatory treatment among Non-Black providers (Altman et al., 2020; Barnett et al., 2022), and made

intentional fissures in the White supremacy of the medical industrial complex by expressing racial concordance and employing racial reconnaissance.

Take Mystie, a 35-year-old Black mother, who gave birth to her second child during the early waves of the pandemic. With her first pregnancy, Mystie's obstetrician was an African American, a provider she described feeling "very safe with." Her next obstetrician was Hispanic. As someone who made her feel "just as safe" she detailed a "great relationship" with her second provider. Attributing this feeling of safety to the provider's racialized identity Mystie noted that she "picks her physicians based upon their ethnicity" and would "prefer to have an African American or Latino." Like all the Black women in this study Mystie emphasized race, not gender, concordance. This preference may correspond with a shared cultural experience among Black women (Collins, 2000), the displacement of Black midwives for White obstetricians (Jeffers et al. 2023), or mistrust in White providers due to the egregious legacy of medical experimentation on Black bodies (Washington 2006). For instance, before White obstetricians implemented a "racist obstetric system" (Jeffers et al., 2023, p.269), Black midwives were the primary birth attendants for Black women throughout U.S.-enslavement. Black midwives were highly respected in Black communities, providing holistic maternal care which benefited pregnant women, their families, and the community (Jeffers et al. 2023). Given the history of respectful, comprehensive care from Black midwives it is plausible that racialized identity mattered more than gender for Mystie and the other Black participants among this sample of pregnant women.

Erica, a 29-year-old Black woman, benefited from othermothering (Collins 2000), another traditional Black custom. She graciously shared her gestational journey with me during her lunch break. She wore a gray cowl-neck sweater, a few baby hairs lay down by her ears.

Erica and I met in 2013 through her husband Cole, my chemistry lab partner in college. We hadn't talked much since I moved to Louisiana, so we quickly caught up on life. I asked how Cole was doing in his new job. She asked how I was surviving my doctoral program.

When Erica started talking about going into labor, she stressed the importance of having two POC medical professionals. With two decades of professional experience in obstetrics, Jackie, Erica's aunt, referred Erica to a "great, fantastic" obstetrician of color. Jackie served as a liaison between Erica and the obstetrician during birth. As Erica's advocate Jackie clearly communicated, asked direct questions, and remained calm. This helped "bypass a lot of problems." Erica feared the worst if her aunt were absent:

> There's so much content and information about Black women and pregnancy. So that was a fear, that something could happen to you. But my aunt was a huge advocate. She walked me through the entire process. So yeah, I didn't have a doula, but I almost felt like I had better than a doula because [my aunt] was there the whole time … prior to delivery, during delivery, and after.

Having a family member who was Black likely contributed to Erica's positive outlook since Jackie participated in othermothering (Collins 2000; Roberts 2017) throughout the birth experience. Central to the Black community, othermothers include a vast scope of extended kin (aunts, cousins) and non-kin (godmothers, teachers, neighbors) who fulfill significant responsibilities for non-biological children (Collins 2000; Roberts 2017). Possibly originating in the antebellum era when separation was rampant among enslaved families, enslaved people developed collaborative, expansive networks to socialize and protect children who were "torn asunder at the slave master's whim" (Roberts 2017, p.53). Consistent with Black feminist perspectives and a rich, historical tradition, Jackie served as an othermother in Erica's account by actively shielding her and her son from adverse outcomes.

Amid the pandemic, pregnant women also encountered unexpected changes, such as limitations in the number of support persons allowed in the birthing room. This caused women to experience decreased social support and increased social isolation (Ahlers-Schmidt et al. 2020; DeYoung and Mangum 2021; Kinser et al. 2022). Since doulas were restricted, in many cases, from entering hospitals during the pandemic, Erica's aunt and her POC provider were indispensable actors in her birthing experience. Erica attributed her empathetic care to racial concordance and her aunt's advocacy.

While Erica benefited from the presence of POC providers during birth, the absence of Black obstetric nurses contributed to Jennifer's negative experience. Jennifer, who I introduced earlier, received contradictory instructions regarding protocols for the Covid test. After receiving the Covid test from a "White nurse," Jennifer described a lengthy back-and-forth with this White provider which left her feeling uncomfortable. She then asked her husband to "get the nurse manager, who was a Black woman." She proceeded to recount the unsettling exchange with the White nurse to the Black nurse manager. In a compelling justification, Jennifer explained:

> I don't want that nurse. She had an attitude with me and I don't care if she perceived me as having an attitude. I'm the patient so she should have handled that with more professionalism and tact … I can handle someone being rude … But the one time that I do not want to have to deal with it, is when I'm getting ready to give birth. I don't want a nurse in the room that is thinking some way about me that might impact my care.

The "Herculean efforts" (Davis 2020, p.60) Jennifer employed to mitigate racial bias and find a Black medical professional align with racial reconnaissance, a dimension of Davis' obstetric racism (2020). Given the precarity of birth for Black women, Jennifer did not want to risk the possibility of maternal mortality (MacDorman et al. 2021, 2017) by allowing a provider who was "being rude" to have any role in her labor and birthing experience. Some social scientists would recognize Jennifer's maneuver as an explicit challenge to White domination

(Erving, Patterson, and Boone 2021). According to Erving and colleagues (2021), when Black women, like Jennifer, take a stand against racism or remove themselves from individuals who are inflicting harm, they actively combat injustice. Moreover, during the Covid-19 pandemic, an unprecedented time of uncertainty for everyone, Jennifer was stripped of control in many areas of her life. By adamantly expressing a desire for another practitioner, Jennifer took additional measures to achieve racial concordance and exert autonomy.

For Jennifer, Erica, and Mystie the racial identity of their obstetric team members mattered for safety, trust, and rapport-building. By having a nurse and obstetrician of color in the birthing room, Erica was able to avoid "problems" stemming from racial bias. As a mom of two, Mystie was likely familiar with the birthing process and purposefully selected providers, based on race, to make her feel protected from the microaggressions and stereotypical treatment that Jennifer perceived. These women were intentional actors who employed small acts of resistance to reclaim their bodily autonomy. Despite their distinct experiences, these women utilized similar strategies to reduce racial bias, and in doing so they made notable cracks in the medical industrial complex and disrupted obstetric racism.

Discussion

Against a backdrop of pandemonium and uncertainty, my analysis highlights narratives from 35 Black and White women who experienced pregnancy during the Covid-19 pandemic. My findings reveal how Black and White women, throughout all phases of the gestational journey, expressed very different scopes of racial self-knowledge amid interactions with obstetric providers. First, Black participants were highly cognizant of racialized stereotypes, specifically how Blackness was likely perceived by providers. This awareness contributed to claims about actual, and anticipated, exposure to derogatory treatment. I found that Black women felt ignored,

were expected to remain calm while in pain, and described hyper-surveillance during postpartum. Using narratives from semi-structured interviews and a case study approach, these stories magnified six dimensions of obstetric racism - intentionally causing pain, coercion, medical abuse, diagnostic lapse, ceremonies of degradation, and neglectful, dismissive, disrespectful treatment. Next, as the White women in the study contemplated the impact of their racialized identity, they constructed variegated responses. Employing racially ignorant frames, most of the White participants had little to no awareness of White privilege. Although White women received attentive, respectful care few connected this to racial advantages. Rather, some White women emphasized socioeconomic background, while others totally denied any privilege from Whiteness. Third, Black women vigilantly sought out Black and POC providers. To combat exposure to, or the anticipated threat of, racial bias Black women employed racial reconnaissance, a seventh dimension of obstetric racism. My findings reveal that Black participants not only desired patient provider concordance across race but, in some cases, employed intentional steps to remove White providers from their care team. Although racial concordance and racial reconnaissance were not mentioned by all Black women, those who performed intentional acts of resistance subverted erroneous perceptions of this racialized group as expendable, weak, and worthless.

My analysis has significant implications for scholarship at the intersection of health and critical race studies. Despite different reproductive histories, many Black women in this study were subjected to monolithic, stereotypical perceptions of Black femininity - a common theme documented in a host of health disparities research (Adebayo et al., 2022; Ahmed et al., 2007; Barnett et al., 2022; Chambers et al., 2023; Henderson et al., 2013; Murrell et al., 1996; OjiNjideka Hemphill et al., 2023; Salm Ward et al., 2013). Health scholars consistently find an

adverse relationship between the racially biased care reported by the Black women in this study and health outcomes (Phelan and Link 2015; Williams 2018; Williams et al. 2019; Williams, Neighbors, and Jackson 2008). For instance, exposure to discrimination, during pregnancy, can increase the likelihood of developing high blood pressure or having a premature birth (Hilmert et al. 2014; Slaughter-Acey et al. 2016). That we live in a social environment where Black women must advocate for unbiased care to ensure a healthy birthing experience illuminates the racial inequities imbued in our U.S. medical system. As Helena Andrews-Dyer's (2019) quote that opened this chapter indicates, this is "exhausting work."

Advocates, especially when a Provider of Color, are vital components for Black obstetric patient's care-teams. Accentuating the significance of receiving care from a POC, several Black women connected favorable treatment to racial concordance with their providers. Through intentional acts of resistance these Black women were adamant about removing White providers from their birthing experience or having POC health professionals who could shield them from obstetric racism. In so doing, Black women confronted and challenged hegemonic, White-centered medical systems which disproportionately harm the Black body. Since all eleven Black women did not express this tactic future research should also examine other resistance strategies.

As I discuss in the concluding section of my dissertation, Black women must continue disrupting obstetric racism by including Women of Color (WOC) doulas in their gestational journey. Although doulas were prohibited from hospitals for many women in this study, when present during the gestational experience, WOC doulas can empower Black women, function as "bodyguards" from anti-Blackness (Nash, 2021, p.72), and serve as protective, indispensable mediums between life and death (Davis 2019b; Nash 2021).

My analysis also shows how White women configured narratives which hinged on their socioeconomic advantages. However, less apparent was how these accounts were enmeshed with Whiteness. By obfuscating the ubiquity of White supremacy and indirectly endorsing equal opportunities for all, White women employed discursive instruments of colorblindness and an epistemology of ignorance (Bonilla-Silva 2022; Mills 1997, 2007). In this way, "contemporary Whites are not so different from everyday Whites in former eras" (Mueller, 2017, p.234). Also, consider the one White participant who provided a racially cognizant account. Her narrative shows race consciousness as possible for White women. Even if beyond the scope of this analysis, an important question for future critical race scholarship is – how does racial self-knowledge manifest in Whites? And what can scholars and activists do to cultivate racial self-knowledge among Whites in ways that do not trigger reactionary and unproductive emotions, such as shame and anger?

My findings should be viewed in light of their limitations. First, my participant's narratives represent specific reproductive experiences. During the pandemic many women likely considered community births (i.e., home births or births that occur at a birth center) to mitigate risk and infection (De Freytas-Tamura 2020a, 2020b; Sakala, Hernández-Cancio, and Wei 2022), but all women in this sample gave birth to a healthy newborn in a U.S. hospital. Feminist scholarship (Feeley, Thomson, and Downe 2020; Niles et al. 2023; Sakala et al. 2022) shows how community births promote greater reproductive autonomy and respectful care, however, I am unable to discern whether hospital settings, relative to community births, shaped participant's experiences. Future research might explore how the birthing environment impacts perceptions of care. Also, my sample is limited to women who had live births. As I discuss in the next paper miscarriages and stillbirths have important implications for health. This is another area that warrants future research. Lastly, I

intentionally restricted this analysis to understanding obstetric racism, White privilege, and patient provider interactions during the Covid-19 pandemic. But I recognize my participants were concurrently situated in a national affront of centuries of racial subjugation. In the U.S. and abroad, the murders of George Floyd, Ahmaud Arbery, and Breonna Taylor incited public outrage. Given the dual impact of racism and Covid-19 in 2020 some scholars even label this historic, cultural moment a "twin pandemic" (Ogunwale et al. 2020, p.200). Because repeated exposure to racialized violence and vicarious racism has profound health implications (Brantley 2023; Eichstaedt et al. 2021) these stressors were likely acutely felt by Black women (Chambers et al. 2023), undoubtedly shaping their gestational journey. To contribute to the limited yet burgeoning body of scholarship in this area, my future research will explore how media coverage of racialized violence during the pandemic shaped pregnant Black women's experiences.

Despite these limitations, my findings broaden extant understandings of racialized experiences and make important contributions to critical race and medical sociology literature. Racism, White supremacy, and anti-Blackness are deeply bound up in the U.S. history of obstetrics and gynecology. Contemporary accounts of pregnancy, labor, and postpartum reify this reality. To ensure reproductive justice for all birthing people, but especially Black women, politicians, health professionals, social justice advocates, scholars, and community organizers can use these narratives to develop interventions that provide equitable maternal health care throughout all stages of the gestational journey.

Chapter 4. Black-White Divergence in Self-Rated Health: The Significance of Pregnancy Loss and Social Context

> I felt lost and alone and I felt like I failed because I didn't know how common miscarriages were because we don't talk about it. We sit in our own pain, thinking that somehow, we're broken.
> — Michelle Obama

Prior to the 1970s, the medical community paid little attention to psychological health after pregnancy loss (Bourne and Lewis 1991; Saunders 2023; Swanson 2011). Poorly understood by medical experts, this reproductive outcome was highly stigmatized in public discourse (Layne 2003). Around the 1990s, sociological research on miscarriages and stillbirths proliferated, and along with this expansion came increased academic interest in the health implications of pregnancy loss (Layne 2003; Saunders 2023). Today pregnancy loss is considered a "major" public health issue (Gregory, Valenzuela, and Hoyert 2022, p.2). Although Pregnancy and Infant Loss Awareness Day (March of Dimes 2024a) and social media hashtags, such as #IHadaMiscarriage (Gold 2021), have increased cultural awareness on the subject matter, this topic is still under-emphasized and overlooked in reproductive and maternal health scholarship.

Analyzing data from the 1997 National Longitudinal Survey of Youth (NLSY97), in this chapter I bring attention to pregnancy loss - a critical, often stressful, event in the reproductive life course. Influenced by the stress process model (Pearlin et al. 1981) and a "reproductive careers" framework (Johnson et al. 2018, p.642), I examine how frequency of pregnancy loss effects self-rated health, whether the effect of pregnancy loss on health varies between Black and White women, and to what extent social context explains the pregnancy loss-health relationship for Black and White women. This chapter advances health scholarship on pregnancy loss and racial inequality by exposing the deleterious impact of multiple pregnancy losses and racial variation in self-rated health following a stressful reproductive outcome.

Losing One or Multiple Pregnancies and Later-Life Health

Broadly defined, pregnancy loss encompasses miscarriages (spontaneous loss prior to 20 weeks gestation) and stillbirths (loss after 20 weeks) (Centers for Disease Control and Prevention 2022; March of Dimes 2023). Approximately 10-20 pregnancies in 100 end in a miscarriage (March of Dimes 2023) and 1 in 175 births end in stillbirth (Centers for Disease Control and Prevention 2022). Note that these statistics likely under-estimate population rates. Because stigma and fear can contribute to underreporting (i.e. women with spontaneous abortions who neglect to report the event) (Yan and Tourangeau 2022) social scientists have imprecise assessments of the exact number of women impacted by pregnancy loss.

Notwithstanding this uncertainty, perinatal loss at any point in the gestational journey can be physically and emotionally stressful, likely engendering deleterious health outcomes. Experiencing a loss increases the risk of anxiety, depression, post-traumatic stress disorder (PTSD), fatigue, and sleep disruptions (Campbell-Jackson and Horsch 2014; Farren et al. 2016; Gerber-Epstein et al. 2009; Neugebauer et al. 1992). Parents can feel "shell-shocked, devastated, overwhelmed, numb, angry, grief-stricken, [and] empty" (Kelley and Trinidad, 2012, p.9) weeks and months after the event. A study based on women's health after miscarriage assessed quality of life across four domains – physical, mental, social, and environmental. Shortly after hospitalization for pregnancy loss, women reported high quality of life in the social domain but low quality of life in the psychological domain (Iwanowicz-Palus, Mróz, and Bień 2021). Complicating perinatal bereavement, miscarriages and stillbirths are often considered ambiguous losses which involve uncertainty and lack closure (Boss 1999; Mcgee et al. 2018). Women who experience pregnancy loss may struggle to make-meaning and can grieve in isolation with minimal acknowledgement by others after the event (Alvarez-Calle and Chaves 2023; Markin

and Zilcha-Mano 2018). And compared to other losses, typically "there are no communal rituals for grieving, no customary religious or social gatherings" after a miscarriage or stillbirth (Markin and Zilcha-Mano 2018, p.20).

Additionally, the bulk of pregnancy loss literature focuses on health after one loss with a dearth of research on health after multiple (two or more) losses. Results from one study on multiple losses shows frequency of pregnancy loss had a stronger impact on mental health than type of pregnancy loss (i.e. stillbirth versus miscarriage) and women with multiple losses were more likely to have major depression, anxiety, or PTSD, compared with women who experienced one loss (Giannandrea et al. 2013). The health impact of pregnancy loss can also manifest immediately or have long-term implications. Some women report grief shortly after a loss while others highlight temporary anxiety that attenuates after weeks or months (Farren et al. 2016; Gold et al. 2016; Lok et al. 2010). Six months after the reproductive event, Gold and colleagues (2016) found higher odds of screening positive for depression and PTSD for women who experienced a loss (i.e. stillbirth or infant death) relative to women with a live birth. These results were robust even after controlling for factors known to predict poor mental health, such as prior depression, bipolar disorder, and PTSD. Consider Lok and colleagues (2010) longitudinal analysis. These scholars measured general health and depression, at four intervals - immediately after miscarriage and again at three months, six months, and one year after miscarriage. Immediately after the loss over half of participants noted poor general health and 10.8% of women still reported poor general health one year after the pregnancy loss. The trajectory of depressive symptoms was similar.

Expounding on this literature, I integrate the stress process model with reproductive life course perspectives to advance empirical knowledge on the relationship between pregnancy

loss(es) and later-life health. First, Pearlin and colleagues' (1981) stress process model, which I introduced in chapter one, identifies a link between stressors and health. Resources can mediate the effect of a stressor and might include coping or meaning-making (Pearlin and Bierman 2013). Individuals cope by avoiding a situation or enacting a set of behaviors to prevent secondary stressors. Meanings are a "multi-faceted construct" (Pearlin and Bierman 2013, p.334) that can emerge prior to, during, or even after a stressor. Meanings stem from values and belief systems and shape how individuals understand their lived experiences (Pearlin and Bierman 2013). After experiencing a stressor, such as pregnancy loss, if an individual struggles to modify the stressor through coping or meaning-making the reproductive event could lead to poor health (Pearlin et al. 1981; Thoits 2010).

The "reproductive careers" (Johnson et al. 2018, p.642) and "reproduction as a process" frameworks (Almeling 2015, p.433) take holistic approaches to reproductive experiences. These paradigms view stressful reproductive outcomes as interconnected across the life span. Relatedly, a life course approach acknowledges the unfolding of life across years, sometimes decades (George 2013). Seminal life course research showed how early experiences shaped later health outcomes and stressed the importance of contextualizing life events (Elder 1974). Taken together a reproductive careers and life course perspective frame pregnancy loss as more than a discrete event with isolated health implications, rather this stressful experience can shape later life, regardless of when it occurs, parity, or fertility intentions. Applying a stress process and reproductive careers lens to my analysis leads to the expectation that each additional pregnancy loss will be associated with lower predicted self-rated health (Hypothesis 1).

Carrying the Reproductive Load: Black-White Health Disparities and Pregnancy Loss

Pregnancy loss is a complex, multifaceted event that, in the U.S., occurs amid racism and sexism. For Black women living in a race-conscious environment gives rise to unique intersectional stressors (Collins 2015; Collins and Bilge 2020; Crenshaw 1991; Erving, Patterson, and Boone 2021). These stressors can manifest alongside, and irrespective of, the quantity of pregnancy losses. Compared to White women, Black women report poor health during and immediately after pregnancy (Orr, Blazer, and James 2006; Segre, O'Hara, and Losch 2006). One study found increased odds of significant and major depression for pregnant Black women in North Carolina, relative to their White counterparts (Orr et al. 2006). Similarly, among women from Iowa, Black mothers had higher depression levels during late pregnancy and early postpartum, compared to White, Hispanic, and Asian mothers (Segre et al. 2006). Because racism and sexism likely contribute to worse health for Black women, when controlling for pregnancy loss I anticipate Black women will have lower self-rated health than White women (Hypothesis 2).

Taking pregnancy loss into account, Black-White health disparities likely remain. However, literature on racial variation in health after pregnancy loss is sparse. Some research suggests a Black-White gap in self-rated health after one pregnancy loss. One empirical study showed higher levels of depressive symptoms for Black women (compared to non-Blacks) after an early pregnancy loss (Shorter et al. 2021). But this study did not examine racial variation in health as pregnancy loss increased. Because Black women consistently report discriminatory health care (Adebayo et al. 2022; McLemore et al. 2018) there is reason to suspect the effect of loss might be worse for this historically marginalized group, relative to their racially advantaged counterparts. For example, due to social location (i.e being Black and female) Black women are

blamed, and even criminalized for miscarriages (Scott, Britton, and McLemore 2019). This "mother blame" (Scott, Britton, and McLemore 2019, p.109) is enmeshed in racist rhetoric and may uniquely impact Black women. While pregnancy loss likely contributes to negative health for White women, mother blame might make the negative effect of pregnancy loss stronger for Black women. Then, as quantity of pregnancy loss increases the negative impact of mother blame may engender increasingly worse health for Black women, leading to a widening Black-White gap in self-rated health. When testing this 'mother blame' hypothesis, I would expect to see worse self-rated health overall for Black women, relative to White women, and a rapid decline in health as pregnancy loss increases (Hypothesis 3a). In Figure 4.1 I illustrate the basic idea of the 'mother blame' hypothesis to clarify this assumption.

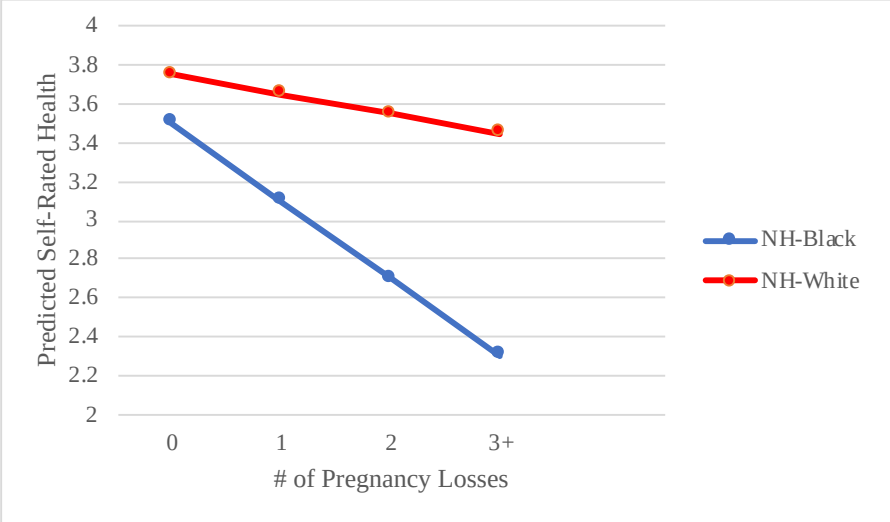

Figure 4.1. The Mother Blame Hypothesis

As alternative perspectives, Black and White women might possess disparate meanings of pregnancy loss. Early stress-health research found distinct responses to the same event, which led psychosocial experts to conclude the effect of a stressor may hinge on its meaning to an individual (Thoits 2013; Umberson, Wortman, and Kessler 1992). For example, if Black and White women possess different meanings of pregnancy loss then the strength of the negative

effect of the reproductive event may vary. Among Black women, the commonality of pregnancy loss might alter the meaning of the event, attenuating the negative effect of this stressor. In Johnson and colleagues' (2023) work on racial inequities and "reproductive loads" (p.14), Black women, relative to their White counterparts, had a higher *quantity* of reproductive events (i.e. 34.8% of Black woman had a miscarriage/stillbirth versus 33.6% of White women had a miscarriage/stillbirth) and different *types* of reproductive events (i.e. unintended pregnancy, preterm birth, and a miscarriage for a Black woman versus only a preterm birth for a White woman). Since Black women are more likely to experience pregnancy loss (Centers for Disease Control and Prevention 2022) alongside other adverse pregnancy outcomes (Grobman et al. 2018), it is plausible that women in this social group develop resilient coping strategies (Erving et al. 2021). Notwithstanding discord about the meaning of resilience (Hollander and Einwohner 2004), Black women may actively respond to stressful circumstances (Jackson, Jackson, and Jackson 2018) mitigating a stressors impact. If Black women gradually acquire resilient coping tactics when the quantity of pregnancy loss increases, then each additional pregnancy loss may have a waning effect on Black women's health. Therefore, as resilient actors, pregnancy loss may have a non-significant effect on Black women's health.

Contrarily, because White women (relative to Black women) are less likely to experience adverse pregnancy outcomes (Grobman et al. 2018), the shock of the pregnancy loss and a lack of adaptive coping skills, might contribute to a strong negative effect on health. If adaptive coping strategies are absent for this group, then each additional loss could lead to worse health (i.e. White women with two losses would have significantly lower self-rated health than White women with one loss). A strong, negative effect of pregnancy loss for White women, and a non-significant effect of loss for Black women, would lead to a narrowing Black-White gap in self-

rated health as pregnancy loss increases. I label this conjecture the ‘shock’ hypothesis and provide an illustration in Figure 4.2 for clarification.

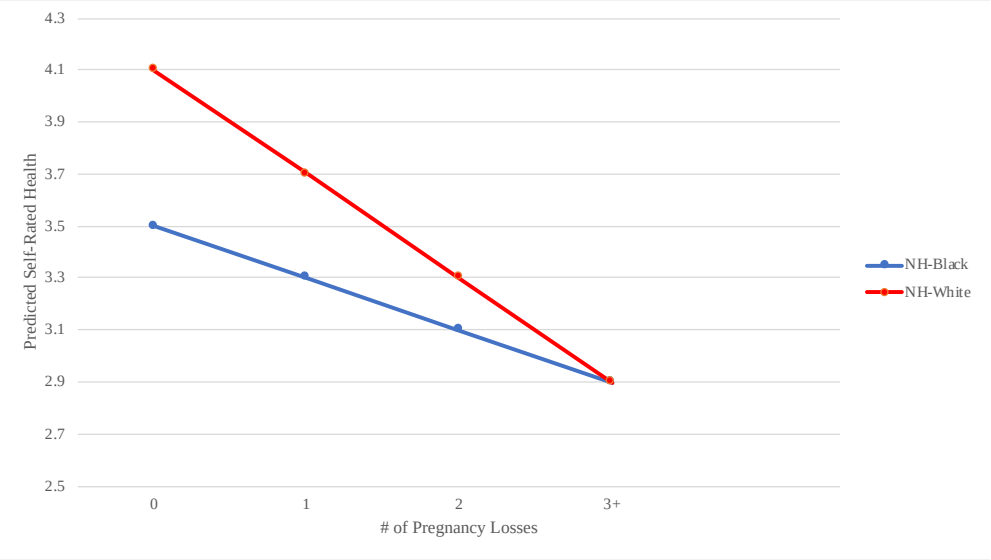

Figure 4.2. The Shock Hypothesis

The Role of Social Context

Through various mechanisms, which I detail below, relationship status, childhood SES and current education, could explain the deleterious health implications of pregnancy loss. First, relational context matters for health. Compared to the unmarried, married individuals typically have better health outcomes. Cohabitor’s health is generally worse than married individuals, but better than the unmarried (Musick and Bumpass 2012; Rendall et al. 2011; Umberson and Thomeer 2020; Yucel and Latshaw 2023). Two explanations underscore the marriage-health relationship. Some scholars posit healthier individuals ‘select’ into marriage. With this reasoning, better health leads to marriage, rather than marriage engendering positive health outcomes (Tumin and Zheng 2018; Umberson and Thomeer 2020). Other family scholars recognize marriage as beneficial. For instance, high-quality marriages incite healthier behaviors (Umberson 1992; Umberson, Donnelly, and Pollitt 2018) and cultivate “pooled economic assets”

(Umberson and Thomeer, 2020, p. 409). Cohabitors in long term, stable partnerships may also collate financial resources and receive companionship (Horowitz, Graf, and Livingston 2019). These mechanisms can indirectly improve health. Thus, women in a marital or cohabiting context, may have additional access to resources (i.e. stable insurance, social support) that aid in coping and mitigate adverse health.

Social scientists also document lasting implications of childhood SES. Early exposure to adversity (i.e. childhood poverty) could 'select' women into poor self-rated health. Because childhood is a crucial stage of the life course, SES throughout childhood might indirectly shape future lifestyles, access to resources, and health trajectories (Ferraro, Schafer, and Wilkinson 2016). In adulthood individuals at the bottom of the SES ladder may also possess fewer material resources which could have deleterious health consequences (Link and Phelan 1995). Because social context indirectly shapes health, these mechanisms might be driving the pregnancy loss-health relationship. If poor self-rated health is also associated with relationship context, childhood SES, and current education then I would expect social context to explain the effect of pregnancy loss on self-rated health (i.e., the magnitude of the slope) for White women and Black women (Hypothesis 4a). By explaining the effect of loss for both racial groups relational and educational context will consequently explain the difference in the effect (i.e. the Black-White gap in self-rated health).

However, social context may only explain the effect of pregnancy loss for White women. Consider Price and colleague's (2006) work using the Early Childhood Longitudinal Study. When stratified by race, their multivariate analysis showed SES factors as predictive only for White women. White women with less than a high school degree and in lower- to middle-SES quintiles had greater relative risk of multiple pregnancy losses. These SES factors were not

associated with Black women. Motivated by Price and colleagues (2006), it is also possible that social context contributes to multiple pregnancy losses for White, but not Black women. If multiple losses are clustered among low-SES White women, yet widely dispersed across SES strata for Black women, then social context may uniquely impact Whites. Based on this alternative perspective, social context might explain the effect of pregnancy loss on self-rated health for White women, but not Black women (Hypothesis 4b).

Data and Methods

Data

For my analysis I utilized panel data from the National Longitudinal Survey of Youth (NLSY97). The study was originally designed to survey individuals from youth through adulthood and intended to be representative of youth born between 1980 and 1984 living in the U.S. in 1997. Between 1997 and 2011, participants were interviewed annually. After this, respondents are interviewed biennially (Cooksey 2018). The response rate for Round 19 (corresponding to participants interviewed between 2019 – 2020) was high at 77.0%. For Round 19 interviews, participants were 34 to 40. The NLSY97 is well-suited for this research given that the sample follows participants from the beginning of their reproductive careers through the later end of their reproductive years (Bureau of Labor Statistics 2019).

The original sample included 6,784 individuals. In 1997, the sample was 51% male and 49% female. The starting cohort also included an oversample of 2,236 Hispanic/Latino and Black individuals. The racial composition of the total sample included 52% Non-black/Non-Hispanic (hereafter White), 26% Black, 21% Hispanic/Latino and slightly less than 1% mixed race. I dropped the less than 1% of people (n=83) who identified as mixed race due to statistical power issues. I also made an analytic decision to exclude Hispanic/Latino respondents (n=1,901)

to focus on Black-White differences. From the remaining sample of Black and White women with values for self-rated health in 2019 (n=2,738), I excluded participants who had missing values for the pregnancy loss measure (n=548) or for any of the covariates (n=377). This resulted in a final analytic sample of 1,813 women.

Measures

Pregnancy Loss. Female respondents were asked fertility-related questions in Round 1 – Round 19. For Round 1 and Round 2 (individuals surveyed in 1997 and 1998, respectively) only females older than 14 by the end of the year prior to the interview were asked questions about pregnancies not ending in a live birth. For Rounds 3-19, all females, regardless of age, were asked about pregnancies not ending in a live birth (Bureau of Labor Statistics 2019). The NLSY97 initially asked women a series of questions about their first pregnancy and pregnancy history. In subsequent waves, women were asked about pregnancy since the 'date of last interview.' When asked about their pregnancy history, women were asked 'number of times ever pregnant,' not including a current pregnancy. If women were pregnant at least once, they were then asked about the quantity of non-live births from previous pregnancies. From these responses, I created a continuous measure of pregnancy losses. Lastly, I tested different top coding for pregnancy loss quantity. Initially pregnancy loss values ranged from 0 to 21. Top coding at 4+ produced cell sizes that were less than 35. I top coded responses at 3+ to generate cell sizes that were large enough for statistical tests.

Race/Ethnicity. To specify the maternal racialized and ethnic identity of each NLSY97 respondent I used an indicator associated with the household informant's identification in 1997. Categorical measures included: Non-Black/Non-Hispanic (reference group) and Black.

Self-Rated Health. To capture an assessment of self-rated health in 2019, respondents were asked 'In general, how is your health?' To measure self-rated health NLSY97 used a five-category measure with possible answers including, 'excellent,' 'very good,' 'good,' 'fair,' and 'poor.' Each categorical measure corresponded with a numeric value (i.e. excellent = 5, very good = 4, good = 3, fair = 2, poor = 1). I created a continuous measure of self-rated health in 2019 with higher numeric values indicating better health.

Covariates. I included several covariates. *Live births* was a dichotomous measure for having had at least one live birth. Categories included zero live births (reference group) and one or more live births. *Total number of marriages* was a continuous measure taken from Round 19 responses. *Total numbers of jobs between ages 14-19* was a continuous measure based on Round 19 responses. I also adjusted for *relationship status in 2019* (married [reference group], cohabiting and single). Women in the cohabiting group included respondents who were never married, separated, divorced, or widowed and cohabiting in 2019. Women in the single category included respondents who were never married, separated, divorced, or widowed and not cohabiting in 2019. Other important sociodemographic characteristics included *mother's education*, a continuous measure (ranging from first grade through eight years of college or more) of residential mother's highest grade completed in 1997, and *respondent's education*, a continuous measure (ranging from sixth grade through eight years of college or more) for highest grade ever completed by 2019.

Analytic Strategy

I used OLS (ordinary least squares) regression to predict the effect of pregnancy loss on self-rated health. Model 1 only included pregnancy loss. For Model 2 I added race. In Model 3 I included an interaction term (pregnancy loss*race) to determine whether the relationship

between self-rated health and pregnancy loss varied by race. In this model you can interpret the main effect of pregnancy loss as the slope for White women (the omitted racial group). The coefficient for pregnancy loss shows how predicted self-rated health in 2019 changes for White women with each additional loss. Next, the coefficient for race pertains to the Black-White difference in predicted self-rated health in 2019 when both racial groups have zero pregnancy losses. The coefficient for the interaction term (pregnancy loss*race) shows the difference in the slope for Black and White women. While the slope for White women is apparent from the coefficient for pregnancy loss (i.e., the main effect of pregnancy loss), to derive the slope for Black women you can add the coefficient of pregnancy loss*race to the main effect of pregnancy loss. The slope for Black women tells you how predicted self-rated health in 2019 changes with each additional pregnancy loss for women in this racial group. To see what characteristics, if any, explained the association between pregnancy loss and self-rated health, for Blacks and Whites, I added covariates in subsequent models. Model 4 adjusted for live births, total number of marriages, and total number of jobs between ages 14 to 19. Then I added relationship status (Model 5), followed by mother's education and current education (Model 6). You can interpret the main effect of pregnancy loss, the main effect of race, and the coefficient of the interaction term in Models 4-6 using the same strategy I described for Model 3. For accessibility, I also plotted the slopes for Black and White women without controls using Model 3 (Figure 4.3) and with controls from Model 6 (Figure 4.4).

Results

In Table 4.1 I present descriptive statistics for the full sample and by race. Findings for the full sample show that on average women had good self-rated health (3.62) and about one pregnancy loss by 2019. About two-thirds of the sample were White women. The proportion of

women with at least one live birth was high (90%). During adolescence women had approximately four jobs. Regarding relationship status, on average women were married at least once by 2019 with a higher proportion in marital unions (53%) than cohabiting (14%) or single (34%). Overall, women came from families where the mother had about 13 years of schooling and by 2019 women had approximately 15 years of education.

Results by race reveal that Black women had significantly lower self-rated health (3.46 for Blacks versus 3.71 for Whites; $p<0.05$) and more pregnancy losses (1.09 for Blacks versus 0.92 for Whites; $p<0.05$). The proportion of women with at least one live birth by 2019 was similar for Black and White women. Black women had slightly fewer jobs between ages 14-19. White women had more total marriages by 2019 and were more likely to be married or cohabiting in 2019. Also, White women had levels of childhood and current SES that were significantly higher than Black women.

Table 4.1. Descriptive Statistics: Probability and Means/Standard Deviation for Total Sample and by Race/Ethnicity

	Overall	**Black**	**White**
Self-Rated Health	3.62	**3.46**	**3.71**
	0.02	*0.04*	*0.03*
Pregnancy Losses	0.98	**1.09**	**0.92**
	0.04	*0.06*	*0.05*
Maternal Race			
Black	35.25		
White	64.75		
1+ Live Birth	0.90	0.89	0.91
Total Marriages	0.85	**0.54**	**1.02**
	0.02	*0.02*	*0.02*
Total Jobs Between 14-19	4.13	**3.63**	**4.41**
	0.06	*0.09*	*0.07*
Relationship Status			
Married	0.53	**0.31**	**0.64**
Cohabiting	0.14	**0.11**	**0.15**
Single, Not Cohabiting	0.34	**0.59**	**0.20**

(table cont'd.)

	Overall	Black	White
Maternal Education	12.95	**12.35**	**13.28**
	0.05	*0.08*	*0.07*
Education	14.54	**14.06**	**14.80**
	0.07	*0.12*	*0.09*

Notes. Bolded numbers show significant differences between Black and White women at p<.05. Standard deviation in italics; N=1,813
Source: NLSY97

I show results from linear regression models in Table 4.2. Model 1, my base model, characterizes the relationship between pregnancy loss and self-rated health. As anticipated from Hypothesis 1, self-rated health is lower for women who had a pregnancy loss. Every 1 pregnancy loss corresponds with a 0.11 decline in self-rated health. Model 2 shows lower self-rated health for Black women (-0.22, $p<0.001$) compared to White women, after controlling for pregnancy loss. This is also expected and aligns with Hypothesis 2.

In Model 3, I incorporate an interaction term (pregnancy loss*race) to assess whether the effect of pregnancy loss on self-rated health is significantly different for Black women relative to White women. The main effect of pregnancy loss (or every additional pregnancy loss) is associated with 0.14 lower predicted self-rated health in 2019 for White women. The difference in self-rated health between Black and White women when pregnancy loss is zero is -0.31 ($p<0.05$).

From the pregnancy loss*race coefficient and the pregnancy loss coefficient in Model 3, I obtain the magnitude and significance of: 1) the slope for White women; 2) the slope for Black women; and 3) the difference between these slopes (also see Figure 4.3). As just described, among White women, when pregnancy loss increases by 1 predicted self-rated health in 2019 declines significantly by 0.14 (e.g., at 0 losses predicted self-rated health is 3.81, at 1 loss predicted self-rated health is 3.67, etc.).

Next, among Black women, predicted self-rated health in 2019 also declines as pregnancy loss increases by 1 (to find the slope for Black women you add the pregnancy loss*race coefficient to the main effect of pregnancy loss for White women: e.g., 0.10 + -0.14 = -0.04). While the negative 0.04 slope for Black women is in the expected direction, surprisingly for Black women the slope is not significant (also see Table 4.3).

Third, the pregnancy loss*race coefficient (0.10, $p<0.05$) is positive and significant. Recall that the interaction term represents the difference between the slope for Black and White women. Note that the slope for White women (-0.14) is approximately 3x larger than the slope for Black women (-0.04). For example, for White women at 1 loss self-rated health is 3.67 but at 2 losses self-rated health is 3.53. But for Black women, the difference in self-rated health between women with 1 loss and 2 losses is less negative (e.g., at 1 loss self-rated health is 3.50 and at 2 losses self-rated health is 3.46). For accessibility, I plotted the Black-White gap in self-rated health without controls in Figure 4.3. In essence this figure shows how the Black-White gap is wide at zero losses, gets closer to convergence at 1 and 2 losses, and by 3+ losses has essentially converged. This aligns with the 'shock' expectation from Hypothesis 3b.

To assess whether covariates explained the effect of pregnancy loss for Black and White women I adjusted for the total number of live births by 2019, total number of marriages by 2019, total number of jobs between ages 14-19 (Model 4), relationship status in 2019 (Model 5), maternal education as reported in 1997, and current education in 2019 (Model 6). Also, note how the R-squared improves from 0.03 in Model 3 to 0.08 in Model 6.

Table 4.2. Linear Regression Predicting Self-Rated Health in 2019

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
Pregnancy Loss	-0.11***	-0.11***	-0.14***	-0.14***	-0.13***	-0.09**
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
Maternal Race (ref White)						
Black		-0.22***	-0.31***	-0.30***	-0.22***	-0.22***
		(0.05)	(0.06)	(0.06)	(0.07)	(0.06)
Pregnancy Loss x Race			0.10*	0.10*	0.08+	0.05
			(0.05)	(0.05)	(0.05)	(0.04)
1+ Live Birth (ref No live births)				0.02	-0.002	0.06
				(0.08)	(0.08)	(0.07)
# of Marriages				0.01	-0.07+	-0.01
				(0.03)	(0.04)	(0.03)
# of Jobs Between Ages 14-19				-0.004	-0.001	-0.01
				(0.01)	(0.01)	(0.01)
Relationship Status in 2019 (ref Married)						
Cohabiting					-0.17*	
					(0.07)	
Single					-0.31***	
					(0.06)	
Mother's Education						0.02+
						(0.01)
Education in 2019						0.07***
						(0.01)
Constant	3.71***	3.78***	3.81***	3.80***	3.97***	2.51***
	(0.03)	(0.03)	(0.03)	(0.10)	(0.10)	(0.17)
Observations	1,813	1,813	1,813	1,813	1,813	1,813
R-squared	0.01	0.03	0.03	0.03	0.04	0.08

*** p<0.001, ** p<0.01, * p<0.05, + p<0.10. Standard errors in parentheses; N=1,813

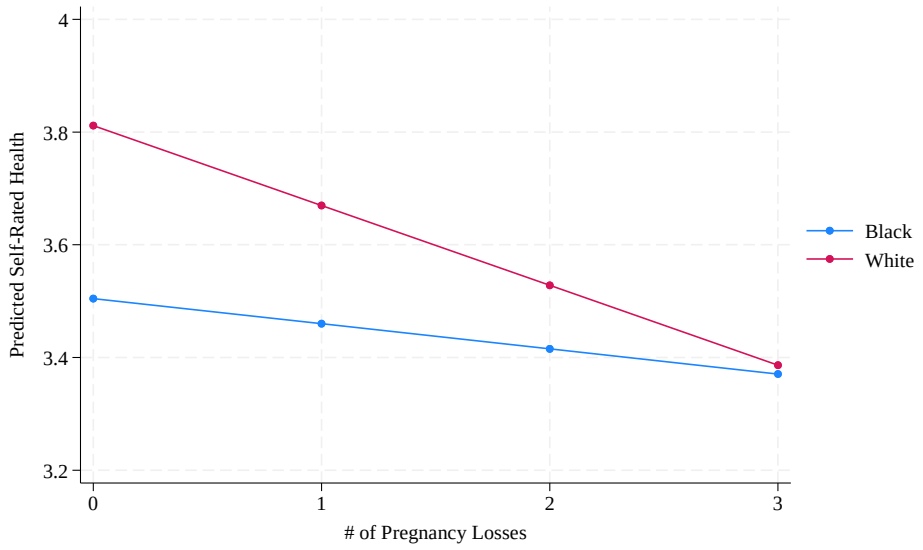

Figure 4.3. Predicted Self-Rated Health in 2019, by Race and Pregnancy Loss (without covariates)
Note: Shaded areas are 95% confidence intervals.

Table 4.3 shows how the slope for Black and White women changes by adding covariates. Among White women, adjusting for the total number of live births by 2019, total number of marriages by 2019, and total number of jobs between ages 14-19 had no effect on the slope (-0.14, $p<0.001$). Controlling for relationship status had a small effect on the magnitude, but not the significance of the slope for White women (-0.13, $p<0.001$). Adding maternal education and current education in Model 6 significantly reduced the magnitude of the slope for White women to 0.09 and slightly reduced the significance of the effect ($p<0.01$). Approximately 36% of the effect for White women is explained by maternal education and current education (1 – (.09/.14) = 0.36).

For Black women, the effect of pregnancy loss remained insignificant after controlling for all covariates. Evident from the 'Black' column in Table 4.3 the magnitude of the slope for Black women stays roughly the same even after adding each set of covariates. The slope also remains insignificant. These results are consistent with Hypothesis 4b.

Table 4.3. Effect of Pregnancy Loss on Self-Rated Health in 2019 for Black and White Women

	Slope	
	Black	**White**
No Controls	-0.045	-0.14***
+ Births, Marriages, Jobs	-0.043	-0.14***
+ Births, Marriages, Jobs, Relationship Status in 2019	-0.044	-0.13***
+ Births, Marriages, Jobs, SES Factors	-0.045	-0.09**

*** p<0.001, ** p<0.01

To clarify these results, in Figure 4.4, I present the Black-White gap in self-rated health based on covariates in Model 6. Although a Black-White gap in self-rated health still exists, the 'less steep' slope for White women renders the racial differences in slopes insignificant (i.e. the pregnancy loss*race coefficient is no longer significant). Note how the difference in the slopes changes with the addition of covariates. Specifically, there is a 3-fold difference in the slopes for Black and White women when covariates are not included and after controlling for live births, total marriages, and total jobs. After controlling for relational context, the difference in slopes for Black and White women is only slightly lower. The slope for White women is still more steep and roughly 3x larger than the slope for Black women. But when I considered educational context the slope for White women is less steep to where the difference in slopes for both racial groups is even smaller (i.e. the slope for White women is now slightly less than 2x bigger than the slope for Black women). At this point the difference in the slopes for Black and White women are not different enough to be statistically significant.

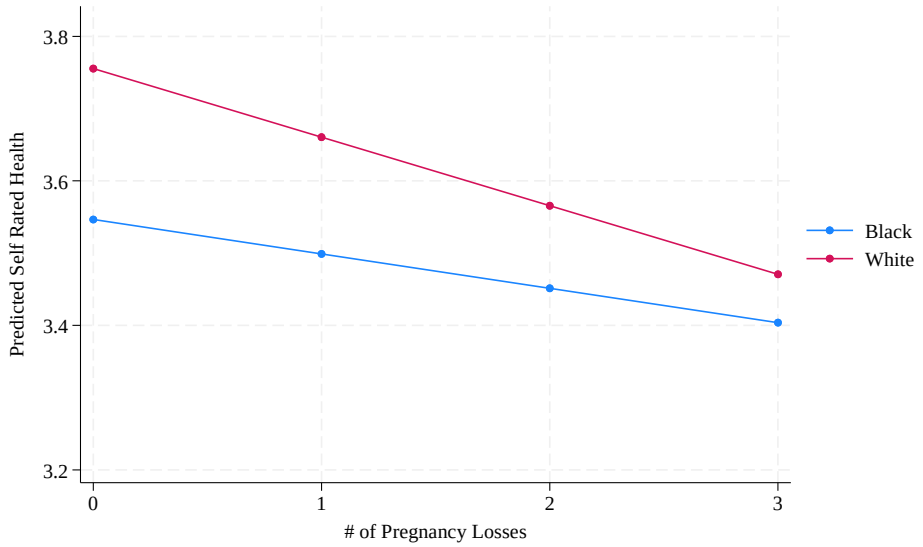

Figure 4.4. Predicted Self-Rated Health in 2019, by Race and Pregnancy Loss (with covariates)
Note: Based on model which adjusts for live births, total number of marriages by 2019, total number of jobs between 14-19, mother's education, and current education. Shaded areas are 95% confidence intervals.

Supplementary Analyses

I also explored whether the two-way interaction (pregnancy loss*race) varied by SES factors. To do this, in separate models I incorporated triple interactions for pregnancy loss*race*maternal education and pregnancy loss*race*current education. The triple interaction terms were not significant. I also dichotomized the primary SES covariates with categories at 'high school degree or less' and 'high school degree or more' for mother's education and current education in 2019. My main coefficients of interests (i.e. coefficient for pregnancy loss, race, and pregnancy loss*race) were substantively and statistically similar when the primary SES covariates were dichotomized. Then I considered whether the results were driven by the continuous nature of the outcome of interest. Dichotomizing self-rated health generated results substantively similar to findings in Table 4.2.

Discussion

This study combined reproductive life course paradigms with the stress process model to look at the effect of pregnancy loss on health. I examined how frequency of pregnancy loss impacted self-rated health, whether this relationship varied by maternal racialized identity, and to what extent social context explained the effect of pregnancy loss on self-rated health for Black and White women.

My analysis illuminates several notable findings. First, in general, I found lower self-rated health as pregnancy loss increases. This aligns with my first hypothesis. Consistent with the second hypothesis, after controlling for pregnancy loss Black women had lower self-rated health than White women. Next, my results showed the effect of pregnancy loss varied by race. Pregnancy loss had a negative and significant effect for White women but a negative and insignificant effect for Black women. This supports Hypothesis 3b which I labeled the 'shock' conjecture. Without considering any covariates the Black-White difference in self-rated health was significant as pregnancy loss increased. But after I adjusted for SES factors, these covariates explained part of the effect of pregnancy loss for White women and had no impact on the effect of pregnancy loss for Black women. This finding is consistent with Hypothesis 4b. Given the mediating effect of social context for White women, the Black-White difference in self-rated health was no longer significant after including educational factors.

These findings align with psychosocial literature on stress and health and make important contributions to reproductive health scholarship. Research on multiple pregnancy losses is sparse with most studies exploring health after one loss or well-being during the pregnancy that follows a loss. In one of the few studies on multiple pregnancy losses, medical experts measured psychological health one-year postpartum confirming worse mental health for women after

multiple losses, compared to women with no losses or one loss (Giannandrea et al. 2013). Notably, to assess poor health, in this analysis Giannandrea and colleagues (2013) used a clinical diagnosis for major depression and anxiety disorders (i.e., PTSD, obsessive compulsive disorder, and social phobia). My analysis extends this research in two key ways. First, poor health can manifest differently (Pearlin and Bierman 2013) and for some people distress might emerge at sub-clinical thresholds. Self-rated health encompasses a comprehensive assessment of general health. By predicting this widely used, and reliable measure (Bombak 2013; Idler and Benyamini 1997; Jylhä 2009), I increase our understanding of well-being after multiple pregnancy losses. Second, I purposefully focus on a pregnancy loss 'ever occurring,' meaning I capture the short- and long-term implications of this stressful reproductive event. Individuals may grieve shortly after the loss, others could have a delayed response, and some might feel triggered at multiple phases in their reproductive careers (Campbell-Jackson and Horsch 2014; Nuzum, Meaney, and O'Donoghue 2018). Given the varied experiences of pregnancy loss and the need for increased knowledge on the lasting effect of stressful pregnancy outcomes my study provides important insight on the reproductive life course.

Regarding racial variation in self-rated health, results revealed significantly lower health for Black women compared to White women. A preponderance of evidence shows Black-White health disparities with systemic and obstetric racism likely underscoring the persistently poor health outcomes for Black women (Davis 2019b; Erving, Patterson, and Boone 2021; Feagin and Bennefield 2014; Williams, Lawrence, and Davis 2019). The somewhat surprising finding in this chapter, pertains to racial variation in the effect of pregnancy loss. Meaning-making and adaptive coping are potential explanations for this finding. Because pregnancy intentions matter for health (Rackin and Brasher 2016; Robbins et al. 2021) women might have mixed emotions

surrounding their pregnancies (Cutler et al. 2018). For example, even for intended pregnancies Black women are less happy than White women (Hartnett and Brantley 2020). With this reasoning in mind, pregnancy loss may be less stressful for Black women if, from the start, they were less happy about the pregnancy. Also, consistent with recent health statistics (Centers for Disease Control and Prevention 2022), the White women in my analysis were less likely to experience pregnancy loss. Due to limited exposure to loss – a unique, stressful reproductive outcome – it is possible that White women had fewer coping repertoires. Therefore, pregnancy loss might be perceived as a shock, leading to a significant negative effect on self-rated health for White women. Black women, in contrast, had more pregnancy losses. Repeated exposure to stressful reproductive events and gendered racism may promote resilience and adaptative coping tactics (Erving et al. 2021). Consequently, after a loss Black women may possess a stronger ability to revert back to a healthy emotional state (Jackson et al. 2018). If true, this could explain the insignificant effect of pregnancy loss for Black women.

Finally, relational and educational context explained the significant difference in the slopes for Black and White women. Akin to Price and colleagues (2006) work, this might indicate that multiple pregnancy losses are more prevalent among White women from disadvantaged SES backgrounds; whereas for Black women pregnancy loss is widely dispersed across class positions.

This study generates new knowledge about pregnancy loss, racial disparities in pregnancy outcomes, and health, but as with all empirical research the findings should be considered alongside several limitations. There are limitations with my pregnancy loss measure and data limitations. First, due to aforementioned challenges with pregnancy loss reporting I intentionally combined elective abortions with spontaneous abortions (i.e. miscarriages and stillbirths). Some

women may have a positive psychological response after an induced abortion, but other women may recognize this event as challenging. For instance, when pressured by family or a partner to terminate a pregnancy women may feel less confident and expect poor skills to handle the situation (Ralph et al. 2014). Future research might employ a qualitative approach to disentangle the complex, varied psychosocial responses following elective and spontaneous abortions. Next, because I focused on 'ever' having a pregnancy loss I was unable to ascertain pregnancy context and childbearing history. Using a reproductive careers and childbearing biography (Thomeer, Reczek, and Ross 2022, p.1) approach I plan to consider sequence of pregnancy loss in my future research. Finally, after controlling for educational context in the last model (Model 6) the difference in the slopes was insignificant. This suggests that if I removed the interaction term in earlier models (Model 3) then the slope for Black and White women would be the same. However, my analysis shows that this is not the case (recall Table 4.3 which shows the slope for White women as approximately 3x higher than the slope for Blacks when covariates were not included). The insignificant slope for Black women is likely due to statistical power issues. With more cases in the overall sample, the effect of losses on health for Black women may be significant. To address this limitation future research should collect more data on pregnancy loss.

My analysis provides compelling insight despite these limitations and extends existing knowledge in reproductive health and racial disparities scholarship. Pregnancy loss is a critical event in the reproductive life course with health implications for pregnant people, their intimate partners, and families. Because pregnancy loss can have short and long-term effects it is necessary to understand this potentially life-altering event. Bearing in mind that health after loss may vary by social position, my findings provide insight into racial heterogeneity in experiencing and navigating stressors. Antiracist, feminist, equity-oriented scholars are uniquely

positioned to use the findings from this analysis to spearhead initiatives that reduce Black-White disparities and ensure healthy gestational experiences.

Chapter 5. Conclusion

> Of all the forms of inequality, injustice in health is the most shocking and the most inhumane.
> — Dr. Martin Luther King, Jr.

Summary of Dissertation Findings

Relying on interdisciplinary evidence from empirical literature and theoretical perspectives related to health disparities, my dissertation illuminates racial heterogeneity in obstetric outcomes and experiences. In the first quantitative paper, 'Racial Inequities in Maternal Health: Black-White Differences in Severe Maternal Morbidity,' I illuminate how advanced education and younger age have distinct impacts on the relationship between severe maternal morbidity and racialized identity. Using nationally representative data from the U.S. Vital Statistics System I found significant health benefits for small educational gains among White mothers. Contrarily, Black mothers acquired health advantages only after obtaining educational credentials, specifically a high school and bachelor's degree. There were diminishing returns for Black mothers at the highest level of education. This education-SMM relationship corresponded with a fluctuating pattern in the Black-White gap rather than a consistently widening racial gap. With respect to the age-health pattern, I found a widening racial gap as age increased and fewer within-group variations for White mothers compared with Black mothers. In other words, SMM probability started increasing five-to-nine years earlier for Black mothers, there was relatively no difference in the probability of SMM for White mothers between ages 25-39, and among Black mothers there was a significant reduction in SMM probability for mothers in the late-20s compared to mothers in the late-30s.

For the second paper, 'Illuminating Obstetric Racism and White Privilege: Black-White

Experiences with Pregnancy During the Covid-19 Pandemic,' I contextualize gestational narratives to a specific moment in U.S. history accentuating variation in racial self-knowledge amid interactions with health professionals. Based on semi-structured interviews with 35 participants my qualitative analysis emphasizes timely issues regarding racial bias, privilege, and resistance in obstetric environments. Despite disparate social backgrounds and childbearing biographies (Thomeer, Reczek, and Ross 2022), Black women were relegated to monolithic beliefs regarding thresholds for discomfort. I detailed how Black women recognized anti-Blackness, felt dehumanized, and denigrated. To combat this disparaging treatment and challenge a system of obstetric and gynecological medicine built on the involuntary contributions of enslaved Black women, the Black participants in my sample advocated for racial congruity with health providers. Juxtaposed to Black women's perceptions of racial, gender, and age discrimination, an overwhelming majority of White women reported dutiful care throughout their gestational experiences. These White participants openly denied racial privilege with some obfuscating the ubiquity of White supremacy by discursively using colorblind frames.

My third paper, 'Black-White Divergence in Self-Rated Health: The Significance of Pregnancy Loss and Social Context,' foregrounds the varied effect of pregnancy loss – a de-emphasized and often stigmatized obstetric outcome – on self-rated health. Driven by the dearth of literature on this topic, I used data from the National Longitudinal Survey of Youth 1997 to show a relationship between pregnancy loss and health. I found notable variation in the significance of the effect of loss for Black and White women. Among White women perinatal loss was associated with a significant negative impact on self-rated health, whereas for Black women the effect of loss was negative but insignificant. Moreover, as frequency of loss increased the Black-White difference in health was, at first, statistically meaningful. Accounting for

educational context, however, fully explained this racial variation. This led to the presumed conclusion that there is a large clustering of White women with multiple pregnancy losses concentrated in lower childhood and current SES backgrounds. Among Black women, in contrast, multiple pregnancy losses is evenly dispersed across SES strata.

Broadening Knowledge of Fundamental Causality, Intersectionality, and the Reproductive Life Course: Contributions to Theoretical Perspectives

By incorporating a host of conceptual frameworks, my dissertation makes notable contributions to theories related to health, intersectionality, and reproduction. First, I deconstruct prevailing notions of fundamental causality. Research from Lieberson (1985) produced early understandings of this framework with Link and Phelan's (1995) work widely cited as central to the development of this perspective. Fundamental cause theory assumes access to resources, specifically "money, knowledge, power, prestige, and beneficial social connections" (Phelan and Link 2015, p.312), as advantageous for health. In my initial quantitative paper, where I analyzed variation in the effect of racism (measured by racialized identity) on severe maternal morbidity across education, I found Black mothers with advanced degrees received negative health returns relative to Black mothers with other, notably lower, educational credentials. Situated at the top of the intraracial SES hierarchy Black mothers with a master's or doctorate degree likely have substantial access to health resources. According to fundamental causality, these 'privileged' Black women should have adequate resources to pursue treatment for obstetric complications and to garner the best maternal health care. My findings challenge this assumption. I show how the health advantages associated with a high-class position do not extend equally to Black mothers, perhaps even harming Black mothers with advanced credentials.

Narratives from Black women also disrupt presuppositions about the nature of occupying a privileged social class. The Black women in my qualitative analysis were highly educated. All

Black participants had more than a high school degree, most Black women had a bachelor's degree, and three Black women had an advanced degree. Recall Jennifer, the Black lawyer I introduced in the second paper, who reported exposure to racial bias. Because anti-Black discrimination was widely felt by my Black participants, Jennifer's story was markedly similar to Asha's, the Black mom of two with some college education. Black women experienced obstetric racism, regardless of their educational background, bolstering my argument that higher education has limited advantages for this historically marginalized social group.

My analytic decision to conduct intercategorical (across-group) and intracategorical (within-group) research (McCall 2005) extends conversations related to intersectionality. Throughout each dissertation chapter I employ intercategorical analyses that highlight meta power dynamics among Black and White populations. I present convincing empirical results and powerful testimonies which show how the medical-industrial complex contributes to the systemic oppression of Black pregnant people and families. Recapitulated in social interactions with obstetric providers Black women are repeatedly exposed to intersectional stressors, leading to harmful consequences.

I couple my comparative research with intracategorical analytic strategies. In her 2011 commentary, the prolific scholar and reproductive justice advocate, Kimala Price, discussed the importance of intersectionality in reproductive health research. She emphatically admonished scholars to "not assume Women of Color are a monolithic group" and to "[create] variables and codes that capture the complexity of the interaction of these points of difference" (Price 2011, S57). By examining within-racial group heterogeneity in severe maternal morbidity and pregnancy loss, I advance quantitative intersectional literature. In the first paper, I explore how racism and classism impact a critical population health indicator. Adding age to the analysis, I

also broaden intersectional knowledge beyond facets of racialization and class. My findings on the age-health pattern in SMM align with the weathering hypothesis (Geronimus 1992) and critique the socially constructed AMA label. Thus, the compounding implications of systemic racism, misogynoir, and classism undoubtedly contribute to rapid physiological deterioration for Black women (Bailey 2021; Colen 2011; Collins and Bilge 2020; Geronimus 1992).

Finally, I integrated a reproductive careers paradigm (Johnson et al. 2018) with the stress continuum (Wheaton 1994) to expose the U.S conglomerate of obstetric services as systemically linked health entities which can disenfranchise Black women prior to, during, and after the gestational experience. Conceptualizing reproduction as interconnected social processes which unfold across the lifespan, I account for pre-pregnancy health and reproductive histories in each dissertation study (Almeling 2015).

Consider pre-pregnancy diabetes and pre-pregnancy hypertension, two chronic health conditions, which I included as covariates in the first paper. Undergirded by structural racism these conditions disproportionately effect Black communities (Hassan et al 2023; Katzowitz 2023; Thomas 2018; Williamson 2021). If unmanaged these health issues can lead to complications during pregnancy (March of Dimes 2024b; Stanford Health 2024), connecting health prior to pregnancy to post-gestational outcomes. I focus on 'ever' having a perinatal loss, account for the number of live births, and present meaning-making as a useful construct in the third paper. Methodologically and theoretically innovative these decisions were intentional. In viewing pregnancy loss as a critical outcome which may have acute, chronic, or intermittent implications, I took a holistic approach to reproductive experiences and included pregnant people who had ever had a loss in my analysis. Further, I included a categorical measure for live births in specific models. This analytic decision is tethered to the reproductive life course perspective

since the impact of a pregnancy loss may change after a woman has a live birth. Detailing the importance of meaning-making, I draw attention to psychosocial literature which asserts variation in the meaning of a stressor (Thoits 2013; Umberson, Wortman, and Kessler 1992). As an129xamplee, the meaning of pregnancy loss likely differs for a person with multiple pregnancy losses who is involuntarily childless relative to an individual who had one stillbirth, early in the reproductive life course, and then gave birth to multiple healthy children.

Finally, Black and White women's gestational narratives, in the second chapter, were infused with details from postpartum and pre-pregnancy experiences. After giving birth mothers spoke about reproductive coercion, depression, and access to childcare. Prior to their pandemic pregnancy, some women navigated infertility or pregnancy loss. Recall Sarah, the Black woman who experienced two miscarriages. After multiple pregnancy losses, her current pregnancy was clouded by grief and uncertainty. These reproductive biographies had implicit and explicit ties to women's health and offer an expansive understanding of the gestational journey.

Opportunities for Future Research and Limitations

Social scientists and population health researchers are increasingly looking to explain racial disparities in severe maternal morbidity and other maternal health outcomes. As mentioned in the first paper I put forth systemic factors as a plausible explanation. Future health research is needed to explore how systemic forces, such as residential segregation, contribute to adverse health among Black mothers. Residential segregation "has created distinctive ecological environments for African Americans" (Williams and Collins 2001, p.409) and has far-reaching health implications for Black birthing people and their families. Institutionalized policies (i.e. redlining) funneled resources into predominantly White neighborhoods while deallocating resources from heavily populated Black areas (Williams and Collins 2001). By disinvesting in

Black communities, policymakers limit access to quality maternity care. In 2020, for instance, over 16% of Black mothers gave birth in a maternity care desert (i.e. a county without an obstetric clinician and birth center with obstetric services) (Brigance et al. 2022). To address mechanisms undergirding this inequity, health scholars can use residential segregation as a proxy for structural racism. While I conceptualized maternal racialized identity as a proxy for structural racism in the first paper, residential segregation is another reliable measure for this macro-concept. One study from Jeffers and colleagues (2023) documented an increased likelihood of SMM among Black birthing people living in deprived neighborhoods. Related work operationalized residential segregation as The Index of Concentration at the Extremes (ICE) (Krieger et al. 2016) and found Black mother's in less privileged areas had a higher likelihood of preterm birth compared to their racial counterparts in privileged regions (Chambers et al. 2019). As a by-product of residential segregation hospital characteristics also shape maternal health outcomes. Hospital characteristics might include quality of care, proportion of non-White patients, and percent of Medicaid recipients (Guglielminotti et al. 2019; Jeffers et al. 2023). To grasp the full scope of the residential segregation-health relationship scholars should integrate these hospital-level factors into future research.

A notable limitation of my qualitative paper is that I only utilized data from semi-structured interviews. To triangulate my study next steps should incorporate an assessment of journalistic accounts and an institutional ethnography. Analyzing data from newspapers and social media would allow researchers to locate Black and White women's stories in a broader historical, political, and social context. To examine how different stakeholders, such as physicians, doulas, midwives, and obstetric nurses, make sense of, and retaliate against, obstetric racism and racial privilege, conducting ethnographic work is a necessary future step for my

research. While Davis (2019b) highlights narratives from radical birth workers in her ethnographic work, this study was conducted before the pandemic. Given the fragility of obstetric healthcare in the United States prior to the recent public health emergency (Kinser et al. 2022) and likely disturbances in medical systems during the Covid-19 pandemic, it is necessary to know more about how practitioners navigated interactions with obstetric patients during this unprecedented time. Also, I limited my analysis to women who experienced pregnancy during the first two years of the Covid-19 pandemic. Although I intend to conduct follow-up interviews with my participants, empirical knowledge on gestational experiences in later phases of the health crisis is sparse. While the earliest years of the pandemic were presumably more chaotic, additional research on maternal health across multiple waves of the pandemic is needed. Examining mental health across two years and three waves, respectively, of the crisis, interdisciplinary studies from Weber and colleagues (2023) and Rogowska and colleagues (2021) provide some insight into this research area. For example, Rogowska's (2021) research team found worse mental health in wave 3 (April 10, 2021 – June 12, 2021) compared to wave 1 (March 30, 2020 – June 29, 2020). However, these studies examine international settings and are not specifically focused on obstetric populations.

With respect to the third study, my primary focus pertained to pregnancy loss. Motivated by a reproductive life course perspective, critical race, health, and family scholarship would benefit from additional research on childbearing, being childless, and being childfree. For example, Thomeer, Reczek, and Ross (2022) detail their concept of the "childbearing biography approach" (p.2) in a recent publication in *Population Research and Policy Review*. This framework accentuates heterogeneity in childbearing contexts and makes important contributions to health scholarship. To build upon this research scholars need to ask: (1) To what extent does

pregnancy, childbearing, and pregnancy loss shape the impact of childbearing biographies on health, and does this relationship vary by race and/or educational status? (2) How does the frequency of adverse childbearing outcomes shape health among Black women, and does this vary by educational status at time of adverse outcomes? (3) To what extent does the timing and sequence of pregnancy loss among Black women shape mental health outcomes, and does this relationship vary by relationship status, and/or educational status at time of loss(es)? The 1979 National Longitudinal Survey of Youth (NLSY79) and the 1997 National Longitudinal Survey of Youth 1997 (NLSY97) are nationally representative datasets which include a broad array of physical, mental, and behavioral health questions. These longitudinal surveys are well-suited to explore these research questions. Answering these questions will elucidate a refined understanding of how distinct reproductive biographies attenuate, and exacerbate, health disparities. Further analysis in this area will also extend important ways to look at heterogeneity within Black mothers.

Although the primary focus of my dissertation pertains to maternal well-being, I acknowledge that adverse health during pregnancy, labor, birth, and the postnatal period can have a ripple effect, leading to deleterious health for infants and families. Black mothers suffer the greatest burden from adverse infant outcomes (Acevedo-Garcia et al. 2005; Mendez et al. 2014) and relative to mothers in other racial/ethnic groups, Black women have the highest predicted likelihood of preterm births. Notably, in the United States, the average preterm birth rate for Black infants from 2020-2022 was 14.6%, compared to 12.2% for American Indian/Alaska Natives, 10.0% for Hispanics, 9.4% for Whites, and 9.2% for Asian/Pacific Islanders (March of Dimes 2024c). Further, the infant mortality rate for Black mothers is almost double the rate of infant mortality for White mothers (US Department of Health and Human

Services Office of Minority Health, n.d.). Expanding health research to encompass an array of maternal and infant outcomes will likely illuminate how Black birthing people and their families are disproportionately impacted by systemic and obstetric racism.

Implications for Practice and Policy

My three-paper, multi-method dissertation has implications for obstetric outcomes, birthing experiences, and reproductive justice. The findings from each chapter relate to health interventions and social policy initiatives. Below I detail a clear need for comprehensive access to mental health resources, emphasize the life-saving impact of radical birth workers (Davis 2019b), especially doulas, and detail current policy efforts designed to improve Black maternal health.

My dissertation exposes how stressors, like obstetric racism or a traumatic birth culminating in severe maternal morbidity, can arise at various moments in the gestational journey. Even before pregnancy, health matters. Interdisciplinary scholarship documents an association between preconception mental health and birth outcomes. For instance, Witt and colleagues (2012) used panel data from a nationally representative sample to analyze preconception health and its relationship to pregnancy outcomes. Women with poor preconception mental health reported higher odds of pregnancy complications (i.e. high blood pressure and eclampsia) and pregnancy loss. Per my discussion in the third paper, empirical evidence from psychosocial scholars also highlights racial disparities in mental health amid pregnancy and postpartum (Segre et al 2006). Notably their results indicate higher odds of a depressed mood for Black women compared with their White counterparts. To combat intersectional stressors and ensure well-being throughout the reproductive life course, access to mental health services is paramount for Black women. I argue that Black women should be

screened for mental health conditions, prior to, during, and after pregnancy. Regrettably, the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice (2018) encourages, but does not require, their clinicians to screen patients for mental health conditions. Also, primary care physicians are only "filling some of [the] gap" (Kyanko et al 2022, p.1646) in access to mental health treatment. Thus obstetricians should be mandated to conduct mental health evaluations with all patients, but especially Black pregnant people, and primary care physicians should receive additional mental health training to help Black people adequately address stressors unique to patients in this social group.

Alongside mental health services, Black pregnant people need radical birth workers (i.e., reproductive justice advocates, midwives, and doulas). For instance doulas offer non-clinical support amid all gestational phases, including postpartum (Ogunwole et al. 2020) and after pregnancy loss (Gross 2023; The Miscarriage Doula 2023). As vital members of obstetric teams, these health workers acknowledge the precarity of Black birth and Black motherhood. In particular, Women of Color doulas have become "foot soldiers" (Nash 2021, p.83) in the fight for reproductive justice. As discussed in the third paper, during the mid-1800s Black midwives were indispensable to reproductive slavery and birth (Davis 2019b; Washington 2006). Decoupled from traditional, medicalized spaces Black midwives successfully employed custom African rituals and medicine to help enslaved women during birth (Washington 2006). Today, Black birth workers continue to demedicalize the gestational experience, meeting expectant mothers at home, in churches, and/or in the workplace. The initial meeting might last for hours, concluding without any reference to the pregnancy (Ancient Song Doula Services 2022; Davis 2019b). A doula's intent is to create "safe spaces" (Davis, 2019b, p.189) and sow seeds for friendship. Along with camaraderie doulas can provide emotional support, share knowledge

about racial disparities, help women access food through the supplemental nutrition assistance program, and present best practices for women in abusive relationships (Ogunwole et al. 2020). Radical birth workers are uniquely advantageous during gestation and postpartum. Offering significant benefits which can mitigate exposure to obstetric racism, these health professionals help pregnant people advocate for respectful care, avoid reproductive coercion, and if desired reduce medical interventions during birth. Conscious of the racist origins of U.S. obstetrics and gynecology, radical birth workers understand how racism and other macro-social factors shape pregnancy and birth outcomes for Black women (Davis 2019b).

Various U.S.-based organizations engage in radical birth work. Ancient Song Doula and the International Center for Traditional Childbirth (2022) empowers Black families during pregnancy by acknowledging a nexus between social justice concerns and deleterious birth outcomes (Davis 2019b). To do so, this nonprofit organization offers a Labor Doula certification. Trainees receive comprehensive instruction which integrates traditional knowledge of birth work with cultural facets. Also, the Ancient Song Doula and the International Center for Traditional Childbirth provides reproductive justice training for health professionals and social service workers. Employing a community-based, anti-racist, and health equity approach the organization targets Black-serving individuals and institutions to promote birth justice.

The Birthing Project (2023) is equally valuable. Founded in 1988 in California, their mission statement aligns with the human rights aspect of reproductive justice. Through mentorship, prenatal, pregnancy, and postpartum services this project promotes "SisterFriending" (The Birthing Project USA 2023). Akin to Black feminist praxis such as 'othermothering' (Collins 2000), SisterFriends pair with pregnant individuals to provide social support and combat maternal health inequities.

Finally, I detail SisterSong, as any discussion of radical birth work is incomplete without recognizing this organizations legacy and continued contributions to reproductive justice. I introduced SisterSong in a previous section of my dissertation but provide a comprehensive account of their work to expound on their importance to Black birthing people, families, and communities.

Typically associated with defining and framing the concept of reproductive justice, this Atlanta-based entity started with 16 organizations typifying four distinct racial/ethnic communities – Asian/Pacific Islander, Chicano/Latino, Indigenous/Native American, and African American (Luna 2020; SisterSong n.d.). Founded in 1997 SisterSong has a long history of advocacy, activism, community-organizing, collaborating with liberal feminist entities, and "strategizing with policy-oriented ally organizations" (Luna 2020, p.7). For example at the Standing Our Ground Against Reproductive Oppression, Gender Violence, and Mass Incarceration Summit in July 2014, SisterSong co-hosted multi-day discussions on birth justice, domestic abuse, and child well-being. More recently SisterSong reignited Trust Black Women (a campaign initially launched to combat prolife billboards). In doing so the organization became the first RJ coalition to explicitly unite Black Lives Matter with a reproductive justice framework (Ross and Solinger 2017; SisterSong 2018).

At present this diverse organization is the largest reproductive justice organization in the United States with a mission to "strengthen and amplify the collective voices of Indigenous women and women of color to achieve reproductive justice by eradicating reproductive oppression and securing human rights" (Luna 2020, p.211; SisterSong, n.d.). SisterSong offers a robust leadership development program. Notably their 'RJ 101: A Solid Introduction to the Framework' training includes information on intersectionality and reproductive oppression. After

completing ‘RJ 101’ current and aspiring thought-leaders are invited to engage in the ‘RJ 102’ workshops. This complementary program provides strategies to foster inclusion, manage conflict, and build unity. In partnership with the Center for Reproductive Rights, SisterSong also focuses on concerns relevant to Black birthing people. At one time the RJ organization spearheaded The Black Mamas Matter Alliance and hosted a Black Infertility Awareness Week (Sister Song, n.d.; Center for Reproductive Rights 2016). Galvanized by a multi-ethnic community and a human rights framework SisterSong is dedicated to combating anti-Blackness and fighting for the emancipation of all Black birthing people.

My dissertation findings illuminate a clear need for radical birth workers and reproductive justice coalitions, like SisterSong, The Birthing Project, and The Ancient Song Doula and the International Center for Traditional Childbirth. To reduce racial inequities in severe maternal morbidity, mitigate exposure to racial bias, and cope after pregnancy loss, pregnant people must have access to affordable reproductive care, such as midwives and doulas. Local and federal policymakers are attempting Medicaid expansion to engender health equity. But unfortunately for many individuals doula access is limited due to inadequate medical coverage (Safon et al. 2021). Since a considerable portion of Medicaid enrollees are BIPOC (Black, Indigenous, People of Color) mothers, insurance coverage could improve access to radical birth workers and increase awareness of doula services (Safon et al. 2021) for historically marginalized groups. Although fifteen states considered adding doula services to existent Medicaid packages, in 2021 only three U.S. states actually implemented additional coverage (Safon et al. 2021).

Federal policy initiatives, such as the MOMMIES Act (2023) and The Black Maternal Health Momnibus Act (2021) provide ambitious alternatives to state-level approaches. In 2023, Representative Ayanna Pressley and Senator Cory Booker re-introduced the Maximizing

Outcomes for Moms through Medicaid Improvement and Enhancement of Services (MOMMIES) Act. At present, Medicaid covers 60 days postpartum. This bill would lengthen health insurance coverage to one year after birth and extend access to reproductive care for a host of people. If enacted, birthing people would likely have increased access to mental health services, radical birth workers, and other obstetric providers.

Representatives Lauren Underwood and Alma Adams, two Black women, spearheaded and introduced The Black Maternal Health Momnibus Act in the 117th Congress (Black Maternal Health Caucus 2021; Taylor and Bernstein 2023). Through significant financial investments the 13 bills included in the Momnibus Act would, among a host of other aims, address social determinants of health (i.e. transportation, housing, food insecurity), enhance care for incarcerated mothers, and increase the quantity of diverse perinatal health professionals (Black Maternal Health Caucus 2021). I draw attention to six bills in the Momnibus Act that align with the topics discussed throughout my dissertation.

First, to alleviate the effect of systemic causes of health inequities, the Social Determinants for Moms Act would develop a U.S. task force of stakeholders who would be charged with mitigating maternal death and other adverse birth outcomes. Acknowledging the nexus between clinical and non-clinical determinants the bill would also create a social determinants of maternal health fund to funnel grants to a swath of organizations (i.e. nonprofits, public health agencies). As per The White House Blueprint for Addressing the Maternal Health Crisis (2022), "The United States has gaps in data related to maternal health. There is no legislative mandate for consistent data collection across states and territories, and standardizing data definitions and format across jurisdictions can be challenging due to a lack of common data collection systems" (p.36). To address this health concern, the Data to Save Moms Act is designed to increase data

collection on the outcome of interest in my first paper, severe maternal morbidity. If passed, this bill would require maternal mortality review committees, supported by grant-funding, to utilize current SMM indicators. These review committees would also be mandated to confer with historically marginalized communities and to engage with stakeholders regarding data acquisition and quality improvement. Directly addressing concepts discussed in my second paper, the Maternal Health Pandemic Response Act, would build a task group to ensure respectful care, throughout birth and postpartum, during future public health emergencies (Taylor and Bernstein 2023). Given disruptions in obstetric care, spurred by the Covid-19 pandemic, this bill proposes to educate birthing people and their health team regarding best practices for maternal/infant wellbeing amid health disasters. Next, consider the Kira Johnson Act (named after Kira, a 39-year-old, healthy Black woman who died shortly after childbirth in 2016) which would enhance health outcomes for Black mothers by implementing anti-racism training in healthcare settings. The Perinatal Workforce Act, another bill in the Momnibus Act, is attuned to the dearth of doula coverage in the U.S., and would establish funding for community-oriented programs, such as radical birth worker centers. Finally, the Moms Matter Act, is uniquely designed to target mental health among birthing people in racially minoritized social positions. By awarding grant funding to various health sectors this bill would train and educate behavioral health workers who specialize in maternal care (Black Maternal Health Caucus 2021; Taylor and Bernstein 2023).

These noteworthy efforts would advance social and reproductive justice initiatives, but many bills are stalled in their respective legislative sectors. For instance, in July 2023 the Kira Johnson Act had only garnered sponsorship from six Senators (out of 100) and 101 Representatives (out of 435). The Moms Matter Act has even less support. To date, only five

Senators and 21 Representatives have sponsored the bill (Taylor and Bernstein 2023). Until these policies are enacted and vetted, “we have many miles to go” (David Williams, 2012, p.13) before all pregnant people, but especially those from historically disenfranchised backgrounds, receive equitable care.

In writing this dissertation my aim was to understand how racism-related stressors shaped obstetric outcomes and gestational experiences throughout the reproductive life course. The evidence and personal narratives in these pages undoubtedly show that the atrocities of the U.S.-past remain hyper-visible and widely felt by Black women in the present. To achieve reproductive justice, we must acknowledge the racist undertones of obstetric medicine. As perpetual agents of change Black scholars and Black mothers are actively pursuing anti-racism, health equity, and reproductive justice. Now, it is time for others to join the fight.

Appendix A. Supplementary Tables

Table A.1 Logistic Regression Predicting SMM for 2016 U.S. Births Among Black and White Women Including Race*Education with all Covariates

	Odds Ratio	Standard Error
Maternal Race (ref White)		
Black	1.05	-0.04
Maternal Education (ref HS Degree)		
Less than a HS Degree	1.04	-0.04
Some College	0.95+	-0.03
Associate Degree	0.94+	-0.04
Bachelor's Degree	0.86***	-0.03
Master's Degree or Higher	0.85***	-0.03
Race x Education (ref White x HS Degree)		
Black x Less than High School	1.12+	-0.07
Black x Some college	1.10+	-0.06
Black x Associate Degree	1.06	-0.08
Black x Bachelor's Degree	0.96	-0.06
Black x Master's Degree or Higher	1.17*	-0.09
Maternal Age (ref 25-29)		
<19	1.33***	-0.05
20-24	1.06*	-0.03
30-34	0.99	-0.02
35-39	1.02	-0.03
>40	1.28***	-0.06
Marital Status (Ref Married)		
Unmarried	1.07**	-0.02
Payment Type (ref Medicaid)		
Private Insurance	1.01	-0.02
Self-Pay	1.05	-0.06
Other	1.29***	-0.06
Diabetes (ref No Gestational or Pre-Pregnancy Diabetes)		
Yes Gestational Diabetes	1.26***	-0.08
Only Pre-Pregnancy Diabetes	1.26***	-0.04
Hypertension (ref No Gestational or Pre-Pregnancy Hypertension)		
Yes Gestational Hypertension	2.07***	-0.05
Only Pre-Pregnancy Hypertension	1.99***	-0.08
Prenatal Care Utilization (ref No Prenatal Care)		
1st to 3rd month	0.85**	-0.05
4th to 6th month	0.87*	-0.05
7th to final month	0.89+	-0.06

(table cont'd.)

	Odds Ratio	Standard Error
Tobacco Use (ref. No Gestational or Pre-pregnancy Tobacco Use)		
Yes Gestational Smoking	1.00	-0.03
Only Pre-Pregnancy Smoking	1.08+	-0.05
Birth Type (ref Vaginal Birth)		
Cesarean Section	2.24***	-0.04
Gestational Age of Newborn (ref Preterm <37 weeks)		
Not preterm (>37 weeks gestation)	0.33***	-0.01
Plurality (ref. Single Gestation)		
Multiple Gestation	1.24***	-0.04
Constant	0.01***	
Observations	2,494,859	
Pseudo R-squared	0.0562	

Note: $^{\dagger}p < .10$. $*p < .05$. $**p < .01$. $***p < .001$; All covariates are adjusted at their mean.

Table A.2 Logistic Regression Predicting SMM for 2016 U.S. Births Among Black and White Women Including Race*Age with all Covariates

	Odds Ratio	Standard Error
Maternal Race (ref White)	1.08+	-0.04
Black		
Maternal Age (ref 25-29)		
<19	1.43***	-0.07
20-24	1.07*	-0.03
30-34	0.97	-0.03
35-39	0.99	-0.03
>40	1.25***	-0.06
Race x Age (White x 25-29)		
Black x <19	0.84*	-0.07
Black x 20-24	0.99	-0.05
Black x 30-34	1.11*	-0.06
Black x 35-39	1.14*	-0.07
Black x >40	1.1	-0.1
Maternal Education (ref HS Degree)		
Less than a HS Degree	1.08*	-0.03
Some College	0.98	-0.02
Associate Degree	0.96	-0.03
Bachelors Degree	0.87***	-0.03
Masters Degree or Higher	0.88***	-0.03
Relationship Status (Ref Married)		
Unmarried	1.07**	-0.02
Payment Type (ref Medicaid)		
Private Insurance	1.01	-0.02
Self Pay	1.04	-0.06
Other	1.29***	-0.06

(table cont'd.)

	Odds Ratio	Standard Error
Diabetes (ref No Gestational or Pre-Pregnancy Diabetes)		
Yes Gestational Diabetes	1.25***	-0.08
Only Pre-Pregnancy Diabetes	1.26***	-0.04
Hypertension (ref No Gestational or Pre-Pregnancy Hypertension)		
Yes Gestational Hypertension	2.07***	-0.05
Only Pre-Pregnancy Hypertension	1.98***	-0.08
Prenatal Care Utilization (ref No Prenatal Care)		
1st to 3rd month	0.85**	-0.05
4th to 6th month	0.87*	-0.05
7th to final month	0.88+	-0.06
Tobacco Use (ref. No Gestational or Pre-pregnancy Tobacco Use)		
Yes Gestational Smoking	1.00	-0.03
Only Pre-Pregnancy Smoking	1.08+	-0.05
Birth Type (ref Vaginal Birth)	2.24***	-0.04
Cesarean Section		
Gestational Age of Newborn (ref Preterm <37 weeks)	0.33***	-0.01
Not preterm (>37 weeks gestation)		
Plurality (ref. Single Gestation)	1.24***	-0.04
Multiple Gestation		
Constant	0.01***	
Observations	2,494,859	
Pseudo R-squared	0.0563	

Appendix B. Recruitment Flyer

ARE YOU PREGNANT DURING THE PANDEMIC?

Researchers at Louisiana State University are interested in learning about **womens' experiences with pregnancy** during a global health crisis.

If you **were pregnant or gave birth during COVID-19** you may be eligible to participate in a 1-2 hour interview.

Take our survey to qualify for an interview

http://lsu.qualtrics.com/jfe/form/SV_9KyqYJQ4Qs7J6GF

Questions?
Contact the principal investigator
Courtney Williams
at **wcourt2@lsu.edu** for more information.

Appendix C. Interview Guide

Thank you for agreeing to participate in this interview. Our conversation should take about two hours or so.

Read consent form with participant and obtain oral consent.

[Begin Recording]

Part 1. Background/Demographics

1. What city/town/community do you currently live in?

2. What is your current relationship status? Probe: Can you tell me about your relationship with the biological father of the child you gave birth to during the pandemic? What is the racial/ethic background of your partner?

3. What is the highest level of education you have completed?

4. How would you describe your employment status? Probe: Were there any significant changes to your employment status during the COVID-19 pandemic?

5. What is your age?

6. What do you do think best describes your racial/ethnic background?

7. What best describes your gender identity? Preferred pronouns?

8. How many times have you been pregnant?

9. How many children do you have?

Becoming Pregnant

Before diving into the details of your pregnancy, I want to understand how the process of becoming pregnant was for you.

1. Was the pregnancy that occurred during the pandemic a surprise? If yes (skip to next section). If no (continue to question 2)

2. How would you describe the process of trying to get pregnant? Can you tell me more about this experience? Did you see a fertility specialist? Did you use any medical interventions to assist with the process? How long did it take to get pregnant?

3. How did you feel while you were trying to get pregnant?

4. Can you describe a day in your life prior to becoming pregnant?

Your Pregnancy

1. What was/is your due date?

2. Can you describe your emotional state before COVID-19?

3. Can you describe 'a typical day in your life' around March 2020 when the World Health Organization declared the coronavirus a global pandemic?

4. Can you describe your emotional state around March when COVID-19 began to rapidly spread across the United States? Probe for feelings of anxiety, worry, etc. Probe for coping strategies used to combat their emotional stance

5. How and when did you find out that you were pregnant? Probe: How did you feel when you found out you were pregnant?

6. What factors, if any, influenced your decision to become pregnant?

7. To what extent did any political or social events impact your decision to become pregnant?

8. To what extent have you been able to include family/friends in any celebratory activities (baby shower, gender reveal parties)?

9. To what extent were you able to share your pregnancy with family/friends (pictures, video chats, social media posts)?

10. Tell me about the level of support you received during your pregnancy?

11. To what extent if any would you say you missed out on anything during your pregnancy?

Risks

Now I want to talk to you specifically about what it was like to be pregnant and/or give birth during COVID-19.

1. What type of prenatal care did you have when you were pregnant? Did any aspects of your prenatal care change during the pandemic?
2. During any of your prenatal care visits, what precautionary measures did your health care provider (e.g., ob-gyn, nurse practitioner, or midwife) take to ensure the safety of you and your baby? Probe: How did you feel about these changes?
3. Were family members allowed in the hospital/center? Probe: If not allowed, how did this make you feel? Were you provided additional support by your healthcare provider?
4. Did your provider transition to telemedicine services? Probe: What was this experience like? Do you feel like you received adequate care? Probe: How did you feel?
5. What types of conversations did you have with your health care provider about COVID-19?
6. Can you describe the race and gender of the primary health care providers who cared for you during your prenatal appointments? Did any other aspects of your providers stick out to you? How did you go about selecting your health care providers?
7. To what extent has the race or ethnic background of your provider impacted you?
8. To what extent did the gender of your provider impact you?
9. Where there any other factors that influenced your interactions with your provider?
10. What types of conversations did you have with your partner about COVID-19?
11. Did you have a doula during your pregnancy? What influenced your decision to have a doula? Were there factors that contributed to your decision to not hire a doula?

13. Did you have any complications during pregnancy, such as diabetes or preeclampsia? Probe: Can you tell me more about this/these experience(s)?

14. What type of research or reading have you done about pregnancy during a public health crisis prior to or during your pregnancy? Probe: Were any particular books or websites that you found helpful? Were any not helpful? Probe: What kinds of things did you learn about? Probe: How did you feel when you were doing this reading/research?

15. What type of research or reading have you done about Black women and pregnancy?

16. What did you worry about the most during your pregnancy?

17. Did you worry about anything [else] during your pregnancy?

18. As you look back on your pregnancy experience, were there any specific events or experiences that stand out in your mind?

Labor and Birth

1. How did you (or are you) preparing for your labor and birthing experience?

2. Did you have a birth plan? Probe: If yes, can you share the details of that plan? Why did you decide to create a birth plan? If no plan, why didn't you create one? What would you have included in that plan?

3. If you already gave birth, can you walk me through it from when you first went into labor until you gave birth to your child.

4. Were there any unexpected events or complications with the birth?

5. How did the health care providers/staff treat you during labor and birth? Probe: How did you feel the coronavirus influenced the kinds of care you were given by your ob-gyn, midwife, doula, and/or nurses? Probe: Did you feel like any other aspects of who you are

(e.g. your identities) influenced the kind of care you received from your ob-gyn, midwife, doula, and/or nurses?

6. In the end, how satisfied would you say you were with your birth experience?

Postpartum

1. How was the postpartum experience for you? Probe: Breastfeeding; Postpartum depression
2. What type of support have you received during postpartum?
3. How do you plan on exposing your newborn to other adults? To other children?
4. How are you planning/How have you transitioned back to work?
5. (If given birth) Overall, how would you describe your postpartum experience, including but not limited to breastfeeding and postpartum depression?
6. (If pregnant) Overall, what is your ideal postpartum experience?

Conclusion

1. To what extent do you feel your race played a role in your prenatal experience? Your birthing experience? Your interactions with health care providers?
2. Have you received or do you plan on receiving the Covid-19 vaccine? What factors lead you to this conclusion?
3. To what extent, if any did your race play a role in your vaccination decision?
4. What does the word reproductive justice mean to you?
5. Is there something else you think I should know to understand your experience better?
6. Is there anything you would like to ask me?

Thank you again for taking the time to participate in this interview.

Appendix D. IRB Approval

LSU | Office of Research & Economic Development

TO:	Berkowitz, Dana Allison LSUAM | Col of HSS | Sociology
FROM:	Alex Cohen Chair, Institutional Review Board
DATE:	07-Aug-2020
RE:	IRBAM-20-0092
TITLE:	Exploring the experiences of pregnancy and childbirth during COVID 19
SUBMISSION TYPE:	Initial Application
Review Type:	Expedited Review
Risk Factor:	Minimal
Review Date:	07-Aug-2020
Status:	Approved
Approval Date:	07-Aug-2020
Approval Expiration Date:	06-Aug-2021
Re-review frequency:	(three years unless otherwise stated)
Number of subjects approved:	100
LSU Proposal Number:	

By: Alex Cohen, Chairman

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.

8. **SPECIAL NOTE: When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.**

** All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

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Vita

Courtney Williams, a proud Indiana Hoosier, was raised by the Reverend Doctor Marsha Williams and her grandparents, Charles and Vivian Wallace. After graduating high school, she transitioned from Indianapolis, Indiana to Sacramento, California. During her time on the West Coast, she attended California State University, Sacramento where she received two undergraduate degrees – a Bachelor of Arts in Biological Sciences and a Bachelor of Arts in Communication Studies. She received a Master of Public Health from Indiana Wesleyan University in 2019 and her Master of Arts in Sociology from Louisiana State University in 2021. In her work she draws upon her areas of expertise in racial health inequities, structural racism, family, and maternal/child well-being to address how systemic inequities influence maternal and child morbidity. She employs an intersectional and reproductive justice approach to interrogate a range of health equity problems, including heterogeneity in gestational and childbearing outcomes throughout the reproductive life course, and the impact of socio-political factors on fertility and health outcomes. Her scholarly record tells the story of her research productivity and highlights her unique ability to engage with interdisciplinary scholarship, use multiple quantitative and qualitative methods, integrate diverse theoretical paradigms, work collaboratively, and write for different audiences. Bringing together theoretical frameworks, such as critical race theory, Black feminist thought, the stress process framework, and the weathering hypothesis, Courtney uses a multi-method approach to answer research questions. Her work has appeared in *Social Science Quarterly, Journal of Social Issues*, and *Journal of Adolescent Health.* Courtney will receive her Doctorate in August 2024. After LSU, she will begin work as a postdoctoral researcher at the Population Research Center at The University of Texas at Austin.