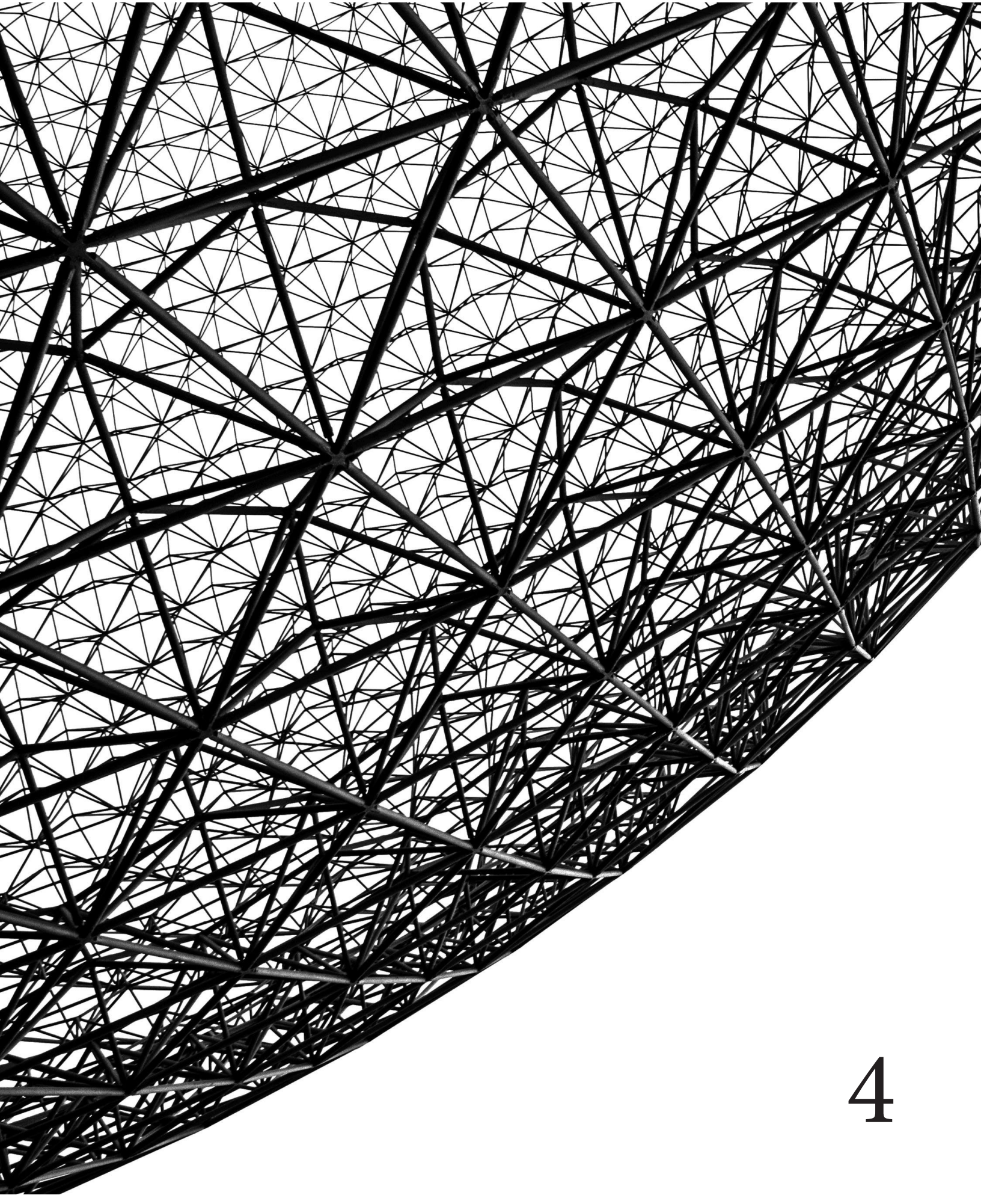

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Black Mothers in America: Why Racial Discrimination in the American Healthcare System is Disproportionately Killing Black Women

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ABSTRACT

The United States has the highest rate of maternal mortality among high-income countries, despite spending the single-largest percentage of GDP on healthcare. This burden disproportionately affects Black mothers who experience a maternal mortality ratio that is four times that of White mothers. This case study demonstrates that the disparities in maternal outcomes between Black and White mothers are rooted in racial discrimination. This racial inequality manifests in part through increased allostatic load as a result of intergenerational experiences of racism; unequal access to high quality insurance coverage; and racial discrimination by healthcare practitioners. Potential interventions to explore include federal and state employment regulations that lessen the socioeconomic barriers preventing Black Americans from accessing quality insurance coverage; cross-cultural training programs in healthcare facilities and teaching institutions; and a systematic shift toward holistic models of childbirth. Though these interventions can serve to diminish the consequences felt on the individual level, collaborative multi-systemic change is necessary to address the social determinants of health that result in poor maternal outcomes on a national level.

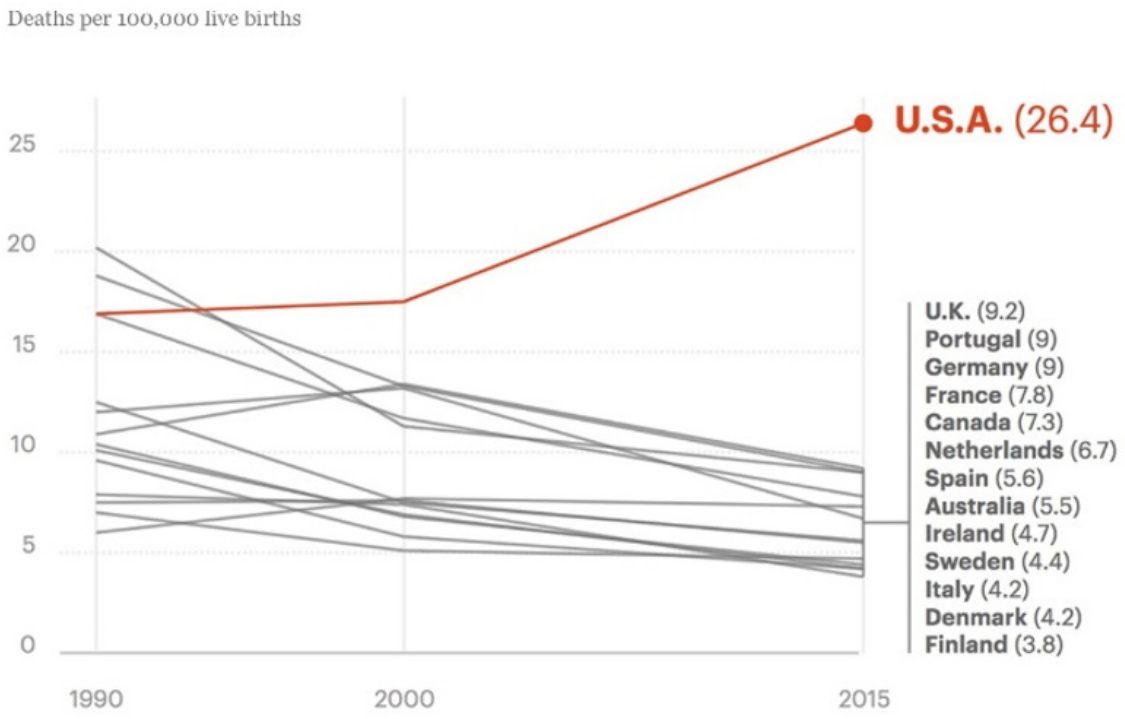

Figure 1: Maternal Mortality (deaths per 100,000 live births) in a Selection of OECD Countries in 1990, 2000, and 2015.1

Background

The United States has the highest maternal mortality rate among high-income countries (1). From 1990 to 2015, the maternal mortality ratio in the United States has climbed consistently from approximately 15 deaths per 100,000 live births in 1990, to over 26 deaths in 2015, as seen in Figure 1 (1).

According to the World Health Organization's 2015 data, the United States is one of very few countries to experience a worsening of maternal outcomes between 1990 and 2015, alongside low-income countries such as the Democratic People's Republic of Congo, Guyana, and the Tonga (1).

These outcomes are shamefully inadequate given the economic investment into healthcare. Specifically in relation to their spending on childbirth-related care, in the United States in 2006, two of the top five most expensive conditions requiring hospitalization were pregnancy–related: pregnancy itself and delivery of newborn infants (2). These two conditions resulted in a combined total of $86 billion spent on child-birth related care in hospitals, or 9.1% of the national hospital bill (2). Considering this alongside the fact that the country has such a high maternal mortality rate and scores poorly on many other child-birth-related outcomes, indicates a very poor return on investment.

Table 1. Maternal and Child Health Disparities between Black and White Americans.(4,5,6)

	Black Americans	White Americans
Life expectancy at birth (years).[4]	74.8	78.5
% Low birth weight (< 2,500 g).[4]	13.05	7.07
Infant Deaths/1,000 live births.[5]	11.4	4.9
Maternal Deaths/100,000 live births.[6]	42.4	13.0

Table 2: Healthcare expenditure and subsequent consequences in the US, by race. (7,8,9)

	Black Americans	White Americans
Total Health Care Spending (Ages 27-30).[7]	$2,191.98	$3,540.00
% Non-elderly adults who did not see a doctor due to cost in the past 12 months.[8]	17%	13%
% Adults that had problems paying or were unable to pay for medical bills in the last 12 month.[9]	31%	18%
% Adults that had to declare bankruptcy because of medical bills in the past 2 year.[9]	8%	3%

Though this represents a massive public health failure on behalf of the United States healthcare system, the risk of maternal mortality is a burden that is distributed unevenly amongst women. For over fifty years, Black women have consistently experienced rates of maternal mortality four times higher than that of White women (3). Even when studies controlled for prevalence, risk in the pregnancy, socioeconomic status, level of education, insurance type, and age of the mother, Black women had an increased likelihood of dying in pregnancy and postpartum (3). Though Black women are not more likely to experience the conditions causing maternal deaths (including but not limited to preeclampsia, eclampsia, abruptio placentae, placentae previa, and postpartum hemorrhage) they are significantly more likely to die as a result of these conditions when compared to the case-fatality rate of a White woman with the same complications (3). Further, the inequalities in pregnancy and childbirth do not uniquely manifest in poor maternal mortality outcomes: when compared to White

mothers and children, Black Americans experience decreased average birth weight, decreased life expectancy, and increased infant and maternal mortality rates (Table 1). All of these indices are evidence of poor pre-and-postnatal care. In addition, financial barriers to healthcare disproportionately affect Black Americans (Table 2). On average, Black people in the US spend less on healthcare, have more trouble paying medical bills, and are more likely to avoid seeing a doctor due to cost than White Americans.

This racial inequality is indicative of a larger socio-political reality in the American healthcare system: despite controlling for health-related factors, "evidence of racial and ethnic disparities in healthcare is, with few exceptions, remarkably consistent across a range of illnesses and healthcare services" (10). Institutional racism is embedded in American institutions as present-day manifestations of a long history of colonization and slavery (11). Healthcare is a system through which "historic patterns of legalized segregation and discrimination" at the individual, community, and institutional levels interact, reinforcing health outcome disparities (10). Among these institutional barriers are multigenerational inequality in employment opportunities, access to safe housing and quality education, and disproportionate representation in low socioeconomic ranks (10).
This case study seeks to illustrate that disparities in maternal outcomes between Black and White mothers in the US are rooted in racial discrimination which acts in part through weathering, inequity in insurance access, and racial bias in the American healthcare system.

The Intergenerational Effects of the Weathering Hypothesis

Allostatic load is defined as the biological cost of exposure to elevated endocrine responses as a result of chronic or repeated stressful experiences (12). Black women, on average, have the highest allostatic load scores in the United States, when adjusting for socioeconomic status (13). The "stress age" hypothesis posits that the health of Black women prematurely begins to deteriorate as a result of their cumulative exposure to stress (14, 15). Through this mechanism, heightened exposure to stressors associated with racism throughout the life course increases Black mothers' risk of pregnancy complications (14).

An emerging mantra for understanding these poorer maternal outcomes includes a feedback loop through which these racial inequities are perpetuated and repeated throughout American society. It has been shown, for example, that Black mothers experience elevated stress levels simply because they fear their children will be subject to racism and discrimination (16). The "stress age" hypothesis posits that traumatic

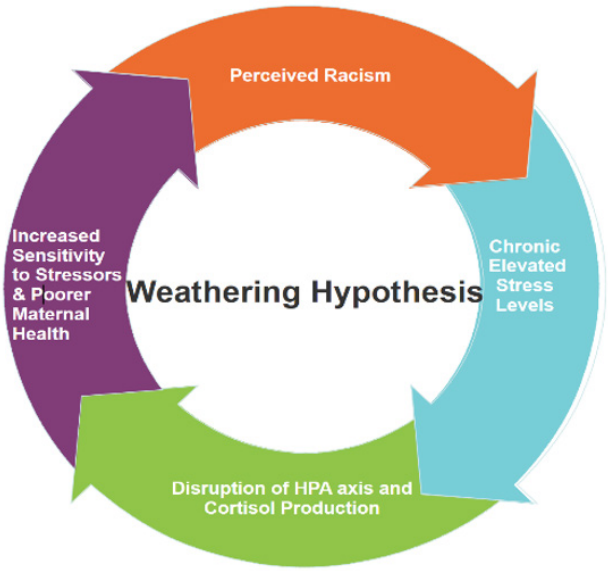

Figure 2: The Weathering hypothesis and accumulation of allostatic load in response to experiences of racism.

events early on in life may continue to stress an individual and even sensitize them to how current stresses are perceived (14). Historically marginalized groups, including Black women in the United States, perceive prejudice to be more stressful than non-stigmatized groups, and may often experience prejudice where others do not (17). Chronic stress experienced by Black women may sensitize these individuals to future stressors, resulting in prolonged and recurring physiological trauma, which may increase the risk of complications during both pregnancy and delivery, as outlined in Figure 2 (18).

Comparing allostatic load scores for Black women, Black men, and White women demonstrates the significance of experiences of racism and discrimination on maternal outcomes. Black women have been found to bear the largest burden of allostatic load compared to Black men and White women (13,19). Further, significant differences in allostatic scores were found for "non-poor Black women" and "non-poor White women", suggesting that differential birth outcomes for Black and White mothers emerge from systemic racism, not socioeconomic status (20).

Moreover, another study found Black mothers ages 23-34 to have higher infant mortality rates than their teenage counterparts (see Table 3) (21). The opposite trend was found for White women: infant mortality rates are higher for babies born to White teenagers than to older White mothers. Notably, neonatal mortality rates for Black women were excessive compared to White women at every age studied, but finding lower neonatal mortality rates for Black teenagers contradicts the assumed socioeconomic

Table 3: Comparing neonatal mortality rates (number of deaths per 1000 live births) as a function of age for Black and White mothers.(21)

Mother's Age	Neonatal mortality (Black Babies)	Neonatal mortality (White Babies)	Rate ratio (Black/White)
15	18.5	12.0	1.54
16	16.8	13.8	1.22
17	14.3	9.9	1.44
18	14.3	8.7	1.64
19	13.3	7.4	1.79
20-23	12.7	7.3	1.74
24-26	16.5	6.1	2.68
27-29	15.0	6.8	2.19
30-34	15.3	8.1	1.88
Over 34	14.3	7.2	1.97

advantage of older mothers of all races. Weathering of Black women's bodies may cause poorer birth outcomes due to the accumulation of toxic psychological stress from enduring racism; whereas teenagers, being younger, have accumulated less allostatic load throughout their life course (20, 21).

In the United States, societal and environmental determinants, especially experiences of racism and discrimination, are more significant determinants of maternal outcomes for Black women than biological factors (26). Further, the disproportionate burden of allostatic load for Black women frames the risk period for adverse maternal outcomes as stemming from before pregnancy and culminated over their life course. This illustrates the conditions experienced as a Black woman living in the United States actively jeopardizes maternal outcomes (20). The state of maternal healthcare of Black women is an urgent and nuanced public health crisis, which mandates social determinants of health analysis. Conceptually, weathering identifies a physiological response to social inequities experienced by Black mothers, on top of the challenges from insurance and racial bias in the healthcare system.

Insurance access

Health insurance coverage for Black women is a major issue when it comes to maternal care. Black women are less likely to be insured than other women in the United States (22). Indeed, in 2018, 13.7% of Black women were uninsured, compared to 8% of White women (22). Not being insured increases the risk of not receiving preventive and basic medical treatments (23). The

absence of suitable medical services during pregnancy is associated with higher child mortality (24).

On average, Black women in the United States earn approximately $22,000 less per year than White men (24). Therefore, paying for expensive health care charges is a complex challenge, and reduces the household funding available for other basic needs such as food, housing and education (24). Furthermore, paying high fees for a chronic disease or reimbursing a heavy medical debt can cause mental distress, poverty, and impair quality of life (23). According to Attanasio and Kozhimannil, uninsured patients also felt more discrimination and received poorer treatment compared to insured patients (25).

Black women are more likely to be covered by public insurance than other Americans. The proportion of Black women covered by Medicaid (61.5%) is approximately two times higher than White women (37.2%) (25). This difference could be explained by the fact that racialized people often work for companies not providing private insurance (23). These low paying jobs pay too much to qualify for Medicare but pay too little for employees to be able to afford private insurance policies (26, 27).

A recent 2013 survey titled Listening to Mothers III has provided an up-to-date snapshot of the difficulty of access to private insurance that Black mothers face (25). Of the 368 Black women surveyed, only 33.7% of Black mothers rely on private insurance as the main source of payment for maternity care, compared to 59.7% of White mothers as outlined in Figure 3 (25). According to the CDC in 2015, although some mothers had access to private insurance before pregnancy, most eventually transitioned to Medicaid at delivery (28). Although not specific to Black mothers, the authors of this report suggested that the reason for this observed pattern could be due to the lack of coverage for maternity services, for prenatal care or for hospital delivery for dependents (28). Furthermore, the authors noted that the other reason for the aforementioned transition was due to the cost or difficulty of purchasing coverage for additional services for existing private insurance plans. For women with maternity services through private plans, high deductibles and out-of-pocket costs presented financial barriers and contributed to the transition to Medicaid. Interestingly, among a small population of mothers (1.1%) who retained private insurance before and during delivery, Black mothers are more likely to report having private insurance coverage than White mothers (28). However, data on private insurance coverage and services offered for post-partum complications are still lacking.

Since the establishment of the Affordable Care Act (ACA), access to Medicaid has

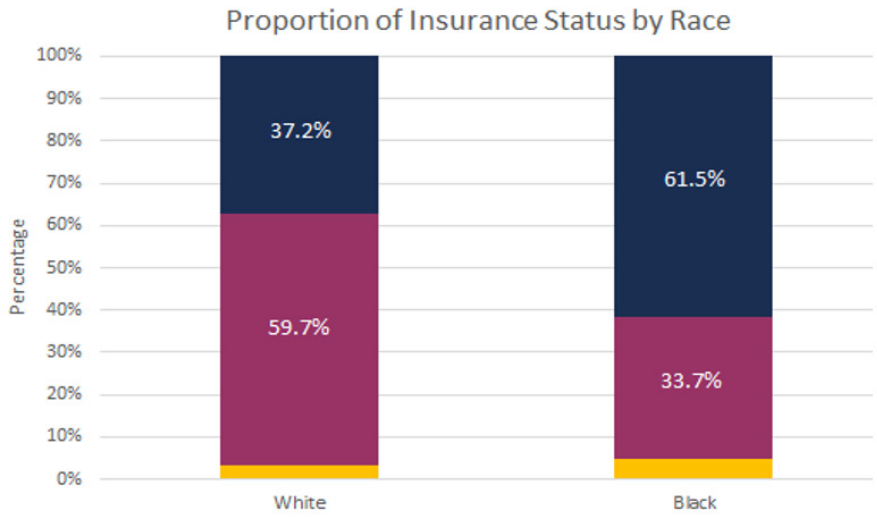

Figure 3: Primary source of payment for maternity care by race.(25)

been extended to pregnant women (29) This program is now covering the fees of prenatal care and delivery for low income women (29). Relative to the rest of the population, Black women rely heavily on the public insurance. 21.1 % of Medicaid patients are Black women, while this group represents 13.0 % of the United States population (29). A study conducted by the Medicaid and CHIP Payment and Access Commission (MACPAC) concluded that women covered by Medicaid were receiving inadequate prenatal care in a higher proportion (29). Indeed, women covered by Medicaid were more likely to have less than nine prenatal care visits and to start prenatal care after the first trimester (29). Therefore, women covered by public insurance had a higher incidence of preterm births and low birthweight infants compared to privately insured women (29). Critically, the Institute of Medicine claims that insurance status, more than any other factor, determines the timeliness and quality of healthcare (30, 31).

Discrimination of Minorites by Health Care Providers

The burden of ethnic and racial discrimination within the US healthcare system has prominent effects on Black women, who must face the compounded consequences of gender and racial discrimination. Although multiple factors contribute to these maternal health disparities, a recent nationwide study of hospital deliveries found that hospitals serving higher proportions of Black patients also had the highest rates of severe maternal mortality (32). Even after adjusting for sociodemographic characteristics, clinical factors, and hospital characteristics, Black women delivering at hospitals that serve many Black patients

Table 4: Comparing indicators for implicit bias among US physicians against Black and White mothers.(34,35)

	Black Mothers	White Mothers
Discrimination when going to a doctor or clinic.[34]	22%	17%
Avoiding health care for fear of discrimination.[34]	24%	7%
Treated poorly due to race, ethnicity, cultural background, or language.[35]	21%	8%

had the highest risk, while White women delivering at hospitals that serve few Black patients had the lowest risk (32). Hospitals serving primarily Black patients also had higher rates of maternal complications as they performed worse on 12 of 15 birth outcomes compared to White-serving hospitals (33). This evidence adds to a growing body of literature suggesting the hospitals serving Black and minority communities provide lower quality of care. There is pervasive evidence in recent studies suggesting implicit racial bias towards coloured patients among physicians, and can be a potential explanation for the lower quality of care received by Black mothers (see Table 4, 34). For example, a study by Hall et al. (2015) found that 22% of Black women reported discrimination when going to a doctor or clinic (34). This can lead to Black women avoiding health care entirely, as 24% of Black women avoided seeking health care out of concern they would be discriminated against, contrasting sharply with the 7% of White women (34). The Listening to Mothers III Survey found that when answering the question, "During your recent hospital stay when you had your baby, how often were you treated poorly because of your race, ethnicity, cultural background, or language?", Black mothers responded "sometimes", "usually" or "always," 21% of the time, compared to 8% for White mothers (35).

While there is evidence that explicit bias does still exist in health care it is important to note that these attitudes or beliefs are often subconscious and can occur despite good intentions (36). This can be a particular struggle for health care providers when they are under time pressure, as they can activate and respond to biased beliefs without awareness (36). Implicit biases are a persistent problem that represent "overlearned cultural associations" that are difficult to re-program (36). White physicians have been shown to display strong implicit preferences for White patients over Black patients, despite seeing themselves as unbiased (36). In one study 72 physicians reported having no explicit biased attitudes against Black patients relative to White ones. Yet, the implicit attitudes of physicians tended to be more negative toward Black patients, and they exhibited stronger stereotypes of Black

patients as being uncooperative (36). Biases are systematic complex beliefs and they go beyond love-hate polarities between groups (36). Biases have the power to adversely affect medical decision-making and clinical interactions which can lead to systematic discrimination in health care and subsequent disparities in health outcomes (36). Racial biases can significantly alter treatment decisions made by physicians and therefore, patient needs are potentially less well matched (37). A 1995 study conducted in California found that Black women were 24% more likely to have a caesarean delivery than White women, even after accounting for insurance, personal, community, and medical characteristics, suggesting inappropriate impacts on medical decision making (38).

Furthermore, patients may respond to bias by feeling mistrust for their healthcare provider; this can discourage individuals from seeking care, decrease their responsiveness, and ultimately reduce adherence to medical regimes (36). Distrust of the healthcare system remains understudied in the obstetric context, but evidence in other healthcare settings shows that distrust of the healthcare system is associated with increased racial discrimination (39). This opens the door to a vicious cycle between racial discrimination and bias by the provider.

Interventions and Future Steps

Systemic inequality requires diverse collaboration at individual, community, and national levels of intervention. Effective solutions will result from the interaction of healthcare, economics, politics, and education systems to tackle both the upstream and downstream consequences of racial inequality in the American healthcare system. While there are limited opportunities to directly minimize the intergenerational health consequences highlighted by the weathering hypothesis, policy changes and interventions addressing the social determinants of health that lead to these health inequalities can hopefully decrease their detrimental effect over time. Targeted interventions that increase insurance access and decrease healthcare provider bias are possible mechanisms through which long-term systemic change can begin.

Interventions to Address Insurance Access Inequity

Public policies could be implemented to reduce inequalities across America. To reduce the gap between Black women and the rest of the population, the public insurance program should focus on accessibility for marginalized population segments. Indeed, too many Black women do not have access to adequate prenatal care, contraception or abortion (24). Many studies found that access to Medicaid reduces disabilities, hospitalizations, and infant mortality, and

increases salary in the long-term (40). In 2013, the Affordable Care Act (ACA) was implemented by the Obama administration. The objective of this legislation was to reduce the number of Americans without health insurance. Some preliminary studies have looked at the short-term consequences of this law and found a reduction in minorities without insurance (8). More studies need to be done to determine the long-term consequences of the ACA. To address the lack of private insurance coverage among Black mothers, it is important for policymakers to be aware of the chronic conditions that many Black women and mothers face. Thus, it is imperative to provide Black mothers with more access to non-hospital facilities with continuity of care instead of acute care centres (Emergency rooms, personal physicians, Health Maintenance Organizations, etc.) through public insurance schemes (41). Furthermore, regulations would be necessary to reduce premium costs and encourage businesses to provide flexible and personalized private insurance options. It is imperative to perform nationwide, specific surveys and studies to visualize coverage trends in recent years and assess how recent policies affect coverage of private insurance for Black women.

Interventions to Address Healthcare Provider Bias

One important potential solution for decreasing experiences of racial bias in health care would be to enhance the diversity of the healthcare workforce. While Black people make-up 13% of the population, only 4% of American physicians are Black (43). Older studies (from the 1990s) found that patients are more satisfied with their care when they are treated by a physician of their same race/ethnicity (44). Further, when compared to White physicians, Black physicians are also more likely to serve medically neglected populations, increase access to health care for Black patients, and achieve higher levels of patient trust and satisfaction (43). There is work to be done on this front as well, as minority health care providers also frequently face discrimination at work (36).

The development and implementation of training programs for healthcare providers offers an intervention strategy that can reduce healthcare disparities caused by racial biases. Cross-cultural education programs should be enforced to enhance health professional's awareness of how culture and social factors influence healthcare, while learning how to implement the knowledge in a healthcare mediated context(45). In particular, public policies and medical practices should incentivize providing patient-centred care that highlights the unique needs of Black mothers (34). Programs such as cultural competency training are important to help health care providers acknowledge and compensate for their implicit biases. Hospitals, clinics, and other institutions could adopt policies

on requirements for this training as well as provider requirements for health plans (25). Policies must emphasize efforts to eliminate cultural biases and discrimination in medical practice and medical education, increase provider diversity in maternity care, and hold providers and hospitals accountable if unbiased, equitable, and high-quality care is not provided.

Alternative Models of Care to Improve Maternal Outcomes

Community-based doulas and midwives present a model of care for Black mothers that can be effectively integrated into the medical setting. Continuous care throughout childbirth by doulas or midwives has been shown to improve maternal and infant outcomes (46). A 2013 study by Gruber et al. found that pregnant mothers matched with a doula experienced improved birth outcomes. In particular, mothers who received communication and encouragement from a certified doula were four times less likely to give birth to a low birth weight baby, and two times less likely to experience a birth complication affecting themselves or their baby, compared to mothers without doula assistance (47). According to the Listening to Mothers in California survey, among mothers of different races, Black mothers showed the highest interest in receiving future care from doulas and midwives (48). For example, the San Francisco Department of Public Health implemented a doula program for pregnant Black and Pacific Islander women from low income backgrounds, in an effort to build a community where these women have access to support and a more satisfying birth experience (49). This program is integrated into the maternity care continuum and diversifies the birth provider workforce by fostering relationships with more traditional providers such as physicians and hospitals (49). Expansion of similar initiatives across the state level throughout the US presents a potential course of action to improve maternal outcomes for Black mothers, but further research in this field is necessary.

Limitations

It is important to recognize that there are limitations to the data and methods used in this case study. Firstly, the data analyzed is not comprehensive; due to differences between hospitals, regions, and states, there may be gaps in this data. Secondly, the conclusions made may not reflect the lived experiences of all Black American mothers, as the majority of the data was gathered at a local level and extrapolated to hypothesize national realities. Thirdly, the use of White mothers as the standard of comparison may serve to perpetuate the structural racism that is harmful to Black mothers in American society. Further, White mothers in America do not have the best maternal outcomes compared to those of other OECD countries and therefore may not be the ideal comparison. Finally, one must acknowledge

the lack of representation in research on this topic as the majority of authors cited in this paper are Caucasian. Future research should aim to empower Black voices and research conducted by Black Americans.

Conclusion

Disparities in maternal outcomes for Black mothers are only one example of the many poor health outcomes for Black people in the United States. Thus, this case study provides one possible starting place from which to investigate the racial asymmetries which plague the US healthcare system. The United States has failed to provide equitable, reasonable care for its Black mothers. This public health failure mandates improved research of racialized access to quality insurance, discrimination in US healthcare, and the disproportionate burden of poor outcomes for Black women. Our analysis of Black maternal health in the US has been grounded in the historical roots of institutional racism in America. Black women's disproportionate accumulation of allostatic load, access to quality insurance, and racial discrimination in the US health care system have been drawn upon to begin to explain why maternal mortality rates for Black mothers are four times higher than that of White mothers.

Institutional racism is embedded in the US healthcare system and it is cutting the lives of US Black mothers unjustifiably short. Unfortunately, suboptimal maternal outcomes for Black women serve as a poignant example of the systematic harm enacted on US Black women for generations. Healthcare first must "do no harm" under the Hippocratic Oath. The United States' failure to Black mothers negates this obligation: racial inequities in maternal care are fundamentally harming Black American mothers. Only systematic shifts – such as awareness, access, and involvement of Black voices into healthcare policy decisions – can combat the systematic roots of poor maternal health for Black women.

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