



# AN INTERVENTION ON FREE AND ACCESSIBLE PRENATAL CARE FOR BLACK MOTHERS IN LOW- INCOME NEIGHBORHOODS

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*ABSTRACT: Inequities in maternal healthcare, especially for Black and Hispanic women, are a serious issue that is killing many lives. The United States has a relatively high prevalence of negative maternal mortality; 700 women pass away during pregnancy or within a year of giving birth, and two out of every three of these deaths might have been avoided. The socioeconomic status, lack of access to prenatal care, poor medical care, underlying health issues (such as obesity, diabetes, and heart disease), socioeconomic level, and persistent stress this population endures all contribute to its increased vulnerability. Some women decide against getting prenatal care because there are barriers that make it harder for them to get it. Since few people are aware that this is an issue that is happening, our community may take action to try and lower these statistics by first raising awareness to the issue. We would achieve this by considering potential laws that would ensure that everyone received the same level of treatment. This study aims to ascertain how having optimal care prior to, during, and after pregnancy may affect the maternal mortality rate.*

## **Introduction**

Maternal mortality rates are a persistent problem in the United States, specifically affecting women of color. In the U.S., Black women and their infants are three to four times more likely to die from pregnancy-related complications than White women (Womack et al, 2020). Health disparities are actual, systemic, and preventable variations that put some people at a disadvantage in terms of mortality rates and medical care based on their race, socioeconomic background, religion, or disability (CDC, 2019). This group's vulnerability is increased by a number of variables, including their socioeconomic status, lack of access to prenatal care, inadequate medical care, underlying health problems (such as obesity, diabetes, and heart disease), socioeconomic level, and ongoing stress (Simons et al., 2020). In this study, we will use a multivariate analysis to

look at how socioeconomic status, access to prenatal care, and underlying health conditions affect maternal health.

## **Barriers to Accessing Care**

Due to obstacles that make it difficult for them to acquire prenatal care, some women choose not to receive it. Lack of transportation, difficulty finding childcare, inflexible appointment scheduling, lengthy wait times for appointments, and conflicting work schedules are some frequent obstacles to receiving prenatal care (Heaman et al., 2014). Many of these problems can be handled by providing accessible no-cost care, especially to people whose health is being negatively impacted as a result. A different option would be to make them more easily accessible. Having a doctor's appointment online so that the mothers may do it from their homes or other convenient locations without worrying about childcare or transportation. In 2011, a Mayo Clinic



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team created a model of care called the OB Nest, which offered moms direct support from a nursing team who would visit them as needed to assist them (Ridgeway et al., 2015). This model included in-home monitoring equipment, asynchronous communication with nurses, an online community for patients and nurses, and proactive calling. According to a small review that was conducted, there are additional elements that affect a mother's decision to seek prenatal treatment, in addition to her perceptions of the staff and providers of general health care (Heaman et al., 2014). Another barrier was the lack of education (Heaman et al., 2014). Many moms are unaware of the advantages of receiving prenatal care and how going without can affect both their lives and that of their unborn children. To ensure the health of both the mother and the unborn child, prenatal care is crucial. Without prenatal care, mothers are at risk of failing to detect health issues that could lead to a high-risk pregnancy which could have a fatal outcome for both mother and child (Office on Women's Health, 2019).

### **Pregnancy-Related Health Issues**

One of the main risk factors for the low maternal death rate among Black mothers is poor health. For Black women giving birth, the most common underlying causes of death are pre-eclampsia, embolisms, and hypertension (MacDorman et al., 2021). Pre-eclampsia is one of the main causes of maternal morbidity among all medical conditions. Pre-eclampsia affects 2-8% of women, and it causes about 63,000 deaths in women worldwide each year (de Arajo et al., 2020). Hypertension, also known as high blood pressure, contributes to higher maternal mortality rates among Black

mothers. According to the "weathering" hypothesis, hypertension has been linked to the stress people experience throughout their lives (Geronimus, Hicken, Keene, & Bound, 2006). This hypothesis suggests that the "challenges and frustrations of living in a disadvantaged neighborhood likely accelerate biological aging" (Simons et al., 2020). According to Simon et al., they also discovered that living in disadvantaged neighborhoods, having low education, and experiencing high unemployment rates, all contributed to their early aging. The American Journal of Public Health (2006) conducted an experiment to determine whether or not stress exposure led to early health issues in Black people. The experiment came to the conclusion that racism and discrimination had a "weathering" effect on them. Their aging process was accelerated and their health was negatively affected by growing up in a racist society where they had to deal with discrimination all their life (Simons et al., 2020). These findings demonstrate that Black women will have to include racism on their list of risk factors for poor maternal health outcomes in addition to the other health issues we talked about.

### **Racism Experienced by Black Communities from the Medical Field**

Unfortunately, racism and prejudice still exist in our culture. Additionally, it affects how people feel physically. Black Americans have higher rates of impairments, diseases, and mortality, which are early indicators of health degradation. This is thought to have been a reaction to their surroundings. As a result, this minority faces obstacles due to systemic racism (Geronimus, Hicken, Keene, & Bound, 2006). According to Lockhart (2018), "Black women are



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disproportionately likely to face these complications, and they are also more likely to fall victim to America's ongoing maternal mortality crisis." According to the Centers for Disease Control and Prevention (CDC), 55.3 non-Hispanic Black women died for every 100,000 deaths in 2020. Based on the findings, it was 2.9 times more likely for non-Hispanic white women to die (Wang et al, 2020). Many women who reported feeling ill and expressing pain or other symptoms to hospital staff discovered that they were simply rejected by them and assumed to be overreacting by healthcare professionals (Ellison, 2019). It would be essential to develop anti-racism training and policies in healthcare settings and to educate people about biases and prejudice so that they can recognize them in themselves in order to combat these instances.

### **Community and Public Policy Level Interventions**

There are a variety of approaches we may take to reduce maternal death rates and health disparities among Black women, but one of them is to implement a community-level intervention. Community-level intervention examines what may be done to improve the health of everyone living in the community. This might be accomplished through strengthening communities, such as those of employees and their environment, and health systems to enable more monitoring and programming for healthcare facilities (Black et al., 2017). A public or local law created by the government as a means of enhancing community health is known as a public policy intervention. Having access to prenatal care is something that can be done about this. Prenatal care is a form of medical attention you can receive while you are

expecting. Prenatal care comprises a variety of services, such as checkups, advice from doctors to promote healthy lifestyles, and early detection of health issues that could improve results (Medline Plus, 2019). The closing of planned parenthood clinics, a provider of reproductive health care, had a negative impact on all women, increasing death by 6% to 15%, according to a study done to see what kind of effect it had on maternal mortality rates (Hawkins et al., 2020). Every woman should have access to prenatal care, and it should be free of charge. This is especially true for those who are unable to receive it due to cost, distance from home, or lack of knowledge about how it might benefit them. In light of this, our study will concentrate more on how maternal health among Black women living in underprivileged areas is influenced by prenatal care accessibility.

### **Gaps in Knowledge**

We do not know how much the various comorbidities we stated have an impact on maternal health in relation to prenatal care accessibility. This is one area where our study has knowledge gaps. Another gap is that there is no other group or race to compare the findings with; our study primarily examines Black women living in poor neighborhoods. We aim to examine how lack of childcare, inflexible doctor's visits, and lack of transportation affect maternal health. We can infer that prenatal care does improve maternal health, but how does access to all of the mentioned barriers work to improve both mother and child's overall health? We want to do this study to discover if expanding access to prenatal care by lowering the obstacles would cut death rates specifically among Black women,



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because there have not been many studies that have examined it in this way.

### Research Question and Hypothesis

Maternal healthcare inequities, particularly for Black and Hispanic women, are a severe problem that is taking many lives. Negative maternal mortality rates are relatively high; in the United States, 700 women die during pregnancy or within a year of giving birth, and two out of every three of these fatalities could have been prevented (Centers for Disease Control and Prevention, 2019 ). When you consider these figures, Black women are three times more likely to pass away from preventable pregnancy-related illnesses (Bibbins-Domingo et al., 2017). There are numerous factors that contribute to these discrepancies, including socioeconomic status, access to medical care, underlying health issues including diabetes and obesity, and many others (Bibbins-Domingo et al., 2017). There are many strategies to lower the chance of death, including making clinics easily accessible and offering free

prenatal care. There is not enough data to determine if free and easily accessible prenatal care will improve maternal health outcomes, particularly for Black women in underprivileged areas. Although we can assume that prenatal treatment is effective, there are several obstacles that hinder women from receiving prenatal care, including lack of transportation, inability to take time off work, difficulty in finding childcare, and a multitude of other things. In this study, we will utilize quantitative approaches to examine the effects of expanding access to maternity care by demonstrating how free services like childcare, flexible appointment times, and free transportation can help improve the maternal health of Black women. We believe that when we conduct this experiment, moms with access to prenatal care facilities including clinics, doctor’s offices, and other types of care will experience fewer complications than those without.

### Research Approach

#### Research Design

Week 4 to 28 of pregnancy	Going for a check-up every 4 weeks, a total of 6 times
Week 28 to 36 of pregnancy	Going for a check-up every 2 weeks, a total of 4 times
Week 36 to 41 of pregnancy	Going for a check-up every 1 week, a total of 5 times

(Figure 1, Prenatal checkup schedule)

Check-ups	Measuring belly	ultrasound	Glucose screening	Tdap vaccination	Group B strep test	Pelvic exam
week	20	18-20	24-28	27-36	35-37	37

(Figure 2 cont., Checkup schedule)



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A prospective randomized control trial (RTC) will be used for this research. We chose this approach because we want to look at the outcomes of our intervention during our study period and see if access to prenatal care reduced bad maternal health outcomes. Using this study, we will evaluate the effects of free prenatal care on maternal health, which includes access to clinics and medical professionals as well as regular, required checks. The birth weight, preterm, infant mortality, pre-eclampsia, and blood pressure of the child and mother will next be examined to determine whether a mother's maternal health had been positively influenced (Svikis et al., 2022). Our information will be gathered throughout the mother's whole pregnancy as well as 12 weeks postpartum. We will be evaluating how she is doing physically during the data collection. This includes physical examination checks, blood, blood pressure, urine, and other tests (March of Dimes, n.d.). In order to determine whether or not our intervention was successful, we will measure the outcomes for the women who are receiving the intervention and compare the data that is already out there for women who aren't. If the outcomes are promising, we will be able to test it out again on a different population.

### Study Population and Sampling

Our participants in this study will include cisgender Black women from disadvantaged neighborhoods in Seattle, Washington.

More specifically, those who are older than 24, which was the average age of African American moms in the US, will be included (Mathews & Hamilton, 2016). We will not include moms who have a history of drug use because it may affect their general well-being. In this study, mothers who visit an obstetrics and gynecology clinic for their first prenatal checkup will be recruited. We will seek out mothers by "using daily patient rosters to identify those eligible" (Svikis et al., 2022), who have undergone screening and show evidence of their vulnerability to poor maternal and infant outcomes. We will use a simple random sampling method to choose 200 mothers from this group. The participants will then receive an email asking them to confirm their interest in taking part in the study. We will provide them with a calendar of the times we will be meeting with them whether it be a private clinic or the same one (whichever is more comfortable for the mother) for their prenatal care checkups after we receive the letter from them confirming they want to participate. We will be using the schedule from Figure 1 for this research because this is the recommended schedule for pregnant women (March of Dimes, n.d.).

### Operationalization and Measurement

We will examine if Black women would benefit from having free and readily available prenatal care as well as how it affects their overall maternal health to determine if this is the case. When discussing maternal health,





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it is important to consider the mother's overall health, including whether she has put on excessive weight or developed other problems like high blood pressure or hypertension while carrying the baby. And if so, how has receiving prenatal care aided them? Did it stop it completely or just stop it from becoming worse? In the study, our independent variable is providing moms with easily accessible prenatal care, and our dependent variable is how positively this has affected a mother's health. The skinfold clippers and the Likert scale will be used to calculate the outcomes at the conclusion of the prospective randomized control trial (RTC). The skinfold clippers will be used to calculate the total body fat percentage (Maastricht UMC, 2019), and we will also send the participants surveys and questionnaires using the Likert scale to gauge how they're feeling on a numerical scale. All of the data will be used for analysis and comparison with already existing data.

### Data Collection

Age, education level, race/ethnicity (which will be African American for this study), body fat, insurance coverage, and other underlying health conditions are some characteristics of the participants that will be gathered through medical records. For further information, such as how important certain things are to them, we will rely on self-reported results (Ridgeway et al., 2015). We will send out a patient satisfaction survey to find out how many of these there are. The 6-item Likert scale subscale used for this form's evaluation will have ratings ranging from "extremely important" to "not important" on a 5-point scale. We will inquire about the importance of transportation, childcare, and late-night

appointments as part of this survey. To determine how prenatal treatment is working throughout the mothers' term, information from their medical records and obstetrics appointments will also be used. This evaluation will take into account significant medical outcomes including pre-eclampsia, infection, or pregnancy loss (Ridgeway et al., 2015). After the intervention is complete, we will continue to check up on them until 12-weeks postpartum so we can see how the mother and child are doing.

### Data Analysis

For analysis we will use an outline of a study that was conducted similarly to this one. The results of all participants' surveys and medical reviews will be analyzed quantitatively and reported using means and standard deviations. This will also include variables that we can categorize, such as the mothers' symptoms, their health conditions, their age, and their body fat (Ridgeway et al., 2015). With interview and focus group data, as well as with analyzing documents from medical data we will use the data to measure our results. The first step would be identifying the key ideas and beginning to construct a framework using the surveys, transcripts, and medical information. We will then organize it using that framework and convert it to coded data (Ridgeway et al., 2015). We will use pre-established criteria for missing data when figuring out the outcomes of patient-reported surveys. The results will be regarded as significantly different between the data obtained for the study and the data we will be comparing it to at a P value of 0.05 (Ridgeway et al., 2015). The impact of prenatal care on the health of the mother will then be evaluated using these data. To determine if we had



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an impact, we will compare the results to current maternal health data for women in Seattle, Washington, using the data we just discovered.

### Ethical Considerations

We need IRB approval before we can move further with this study. If it is authorized, we will conduct a study to determine the impact of free prenatal care on the health of moms and their unborn children. As a result, we must make sure that participants express both verbal and written consent and are fully aware of the terms of their participation. We will conduct a quantitative experiment to examine the facts on how free prenatal care, including regular checkups, assistance for encouraging healthy lifestyles, and early diagnosis of health issues, affects maternal health for Black women. A randomly selected sample of moms from a National Institutes of Health study on the Pregnancy Risk Assessment Monitoring System (PRAMS) will be included in the population. According to the Office of Research on Women's Health, this study examines "population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy" (National Institutes of Health, n.d.). We will give them free prenatal care because we want to see if it improves the health of the mother. We will offer a secure area for the women to visit for frequent data-necessary check-ups, and we will make sure to protect confidentiality. In an effort to decrease the negative impacts on maternal health brought on by inadequate prenatal care, we will share some of our findings with the public, while respecting patient confidentiality. In the event that the information is made public,

the moms' identities would remain private and anonymous.

### Discussion

#### Significance

The link between the rising number of maternal deaths among Black women and public health is mostly explained by systemic racism and healthcare disparity, as well as by socioeconomic position, inadequate education, and accessibility (CDC, 2019). Black women and women of all backgrounds should be treated equally and with respect, just like White women. The level of treatment someone receives and the death rates shouldn't be influenced by a person's race or socioeconomic background. The concept of intersectionality can help explain the simultaneous experience of various categories people fall in like race and gender that lead to discrimination or repression (Smith, 2016). Black mothers' chance of having a poor maternal outcome is significantly higher than that of other women, in addition to racism, limited access to healthcare before and during pregnancy, prenatal care, and other factors (Lockhart, 2018). According to University of Washington research, since COVID-19 has become widespread, up to 15% of pregnant women have required hospitalization for COVID-19-related respiratory problems (Lokken, 2020). "Pregnancy is considered a higher-risk state in the context of many infections, and pregnant women face various uncertain[ies]," the authors of this study wrote (Lokken, 2020). Even though pregnant women are already at high risk, adding additional factors makes their risk even higher. Since not many people are aware that this is happening, we as a community may act to attempt to lower these statistics



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by first bringing attention to this significant problem of maternal health disparities. We would do this by determining how we might put regulations into place to guarantee that everyone receives equal care. The purpose of this project is to determine the influence receiving appropriate treatment before, during, and after pregnancy may have on the maternal mortality rate.

### Limitations

Since we are only looking at a small sample of Black mothers from Seattle, Washington, several sampling restrictions may make this study's results less representative of the entire community. But if the findings of this study are encouraging, it would enable us to test this further in more contexts to obtain more precise data. Since this is a quantitative study, a more detailed examination of the findings in relation to the participant's experiences is not possible. Doing a quantitative method also means that we get numerical data that is more accurate and precise. This investigation will take a lot of effort, cost a lot of money, and necessitate numerous updates. Due to this, some participants may decide to leave before it is finished.

### Future Directions

We can run this study again and test it with a different group to compare the results. We would then be able to aid all women from different demographics if the study was conducted, we got data, and they showed good results. We may try this again and again in various Black, Indigenous, and People of Color (BIPOC) communities in many U.S. cities and states, as well as in other countries. If the results of the second study indicate that there is a positive correlation

between the availability of prenatal care and a mother's health, we can attempt to implement it at the community level or even as a public policy. To ensure that all women have this free/affordable access to prenatal care, we would create a policy stating that women shouldn't have to pay for prenatal care. Another suggestion would be to open more clinics so that pregnant women, who don't receive care because it's difficult to access, might go and get prenatal care on their own.

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