EXAMINING MATERNAL HEALTH DISPARITIES THROUGH GLOBAL COMPARISON AND STAKEHOLDER PERSPECTIVES

by

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ABSTRACT

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Maternal mortality is a pressing global public health problem that disproportionately affects Black women and birthing people. In part one of this mixed-methods study, Black maternal health stakeholders (ages 18+) in North Texas were recruited to complete a 25-item survey to understand their perspectives on community-based approaches to health equity. Survey participants (N=16) reported inadequate financial, human, and social resources for addressing Black maternal health (75%) and that they rarely see local efforts focused on policy, systems, and structural changes (70%). In part two, a systematic document review was performed to identify and analyze national maternal health policies and programs among five high-income countries with the highest maternal mortality rates. Document review findings indicate that the U.S. has policies that

are equally or more equitable than other high-income countries, despite higher maternal mortality rates. The study findings have important implications for reducing maternal mortality among Black women in the U.S.

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CHAPTER 1

INTRODUCTION

1.1 Maternal Health as a Global Concern

Despite increasingly new health technology developed over the last century, the United States faces a maternal health crisis. Maternal mortality, or pregnancy-related death, is defined as "the death of a woman while pregnant or within 1 year of the end of pregnancy from any cause related to or aggravated by the pregnancy" (*Pregnancy Mortality*, 2023). Maternal mortality impacts many women across the globe. The global maternal mortality rate is 223 deaths per 100,000 live births, with rates varying by national income level (*Maternal Mortality*, 2023). Typically, low-income countries have higher rates of maternal mortality. However, the United States (US) is a high-income country with the highest maternal mortality rate compared to peer high-income countries. (Commonwealth Fund, 2022).

The United States' maternal mortality ratio is 23.8 deaths per 100,000 live births in total among all women (Commonwealth Fund, 2022). Due to a plethora of factors such as bias, inequitable policies, and unequal access to resources in the United States, there are significant racial/ethnic disparities in maternal mortality. Maternal mortality rates are the highest among Black women, (55.3 deaths per 100,000 live births) followed by White women (19.1 deaths per 100,000 live births) and Hispanic women (18.2 deaths per 100,000 live births) (Commonwealth Fund, 2022). To fully understand how to improve maternal

healthcare in the United States, effective strategies must be identified to improve Black maternal health in the US (Advancing Equity, n.d.).

1.2 Study Objectives

Given the problem of health inequities, the objective of this study is to analyze maternal healthcare programs and policies at both an individual and a global scale. The first portion of this study aimed to understand perspectives of maternal health stakeholders to identify community-based approaches to achieving maternal health equity. For the second portion of the study, a document review was conducted to analyze maternal health policies and programs among five high-income countries with the highest maternal mortality rates. These study methods served as tools to identify areas of policy and practice that can be improved upon to protect the lives of Black women in the US.

CHAPTER 2

LITERATURE REVIEW

2.1 Maternal Mortality: An Overview

Maternal mortality rates can differ dramatically between low- and high-income countries due to disparities such as lower gross domestic product (GDP) allocated towards healthcare or structural and financial barriers to the accessibility of healthcare facilities (*Maternal Mortality*, 2023). In many high-income countries, the percentage of GDP spent on healthcare is relatively equivalent, so maternal mortality ratios may look similar (Gunja, et al., 2022). High-income countries, like the US, also typically have more complex healthcare systems, where well-supplied and accessible healthcare facilities are more likely to be found (Mounier-Jack, et al., 2017). The US spends more on healthcare expenditures than the top five high-income countries with the highest maternal mortality rates, yet still has the highest maternal mortality ratio (*Trends in health care spending*, 2023).

Increased risk of maternal mortality is associated with advanced age, lower education levels, lack of prenatal visits, and hypertension (Diana, et al., 2020). Despite these risk factors, over 80% of US maternal deaths in 2022 were found to be preventable (*CDC: Pregnancy-related deaths*, 2022). The most common contributing factors associated with preventability of maternal deaths include patient factors (e.g., lack of knowledge of warning signs), provider factors (e.g., misdiagnosis and ineffective treatment), and systems of care (e.g., lack of coordination between providers) (Liang, et al., 2011).

2.2 Racial/Ethnic Disparities in Maternal Mortality

Maternal mortality affects women of all backgrounds, but Black women suffer at a significantly higher rate than other racial groups, and the number of Black deaths continues to rise (Creamer, 2020). The maternal mortality ratio for Black women in 2007 was just 18.8 deaths per 100,000 live births (Chescheir, 2016). However, just 13 years later in 2020, the rate increased to 23.8 deaths per 100,000 live births (Hoyert, 2022). Black women die due to cardiovascular conditions, cardiomyopathy, and other medical conditions 5.9% more often than their White counterparts and are more likely to be affected by hemorrhage and hypertensive disorders of pregnancy (Howell, 2019).

To understand why this is relevant, one must look at healthcare from a structural and social perspective. Despite individual factors such as education, wealth, or socioeconomic position, it has been shown that Black women continue to die at higher rates than white women (Kennedy-Moulton, 2022). This biased and unequal treatment of Black women ultimately stems from a term referred to as "systemic racism" (Lynch & Perera, 2017). In the US, systemic racism takes the form of "policies and practices that exist throughout a whole society or organization, and that result in and support a continued unfair advantage to some people and unfair or harmful treatment of others based on race" (*Systemic racism*, n.d.).

This disadvantage may appear in numerous ways including wage inequalities (Poverty, n.d.), mortgage loan approvals, and disregard by healthcare employees, all of which impact the mental and physical health of Black women. These disparities that ultimately result from social inequities further explain how maternal mortality is influenced and shaped by a variety of determinants.

2.3 Community-Based and Policy Approaches to Combating Maternal Mortality

There is an abundance of health advertising and programming that targets individual change through workouts, diet change, or personal education. However, the underlying culprit behind the deaths of millions of Black women often goes beyond individual choices and instead points to community context and policy (Keisler-Starkey & Bunch, 2022). To fully address the disparities in maternal healthcare, there must be an emphasis on factors beyond an individual's education and healthcare encounters. For Black women, despite a college education, the likelihood of experiencing severe maternal complications is three times more than that of White women who are uneducated (*Severe Maternal Morbidity,* 2016).

One way that maternal health may be improved, rather than placing blame on Black women for their health, is through the creation and implementation of community-based healthcare efforts. Group-led organizations that "center" perspectives from individuals in the community most affected, include them in design and planning, and continuously rely on their input for implementation and assessments, are effective in giving Black women an opportunity to change their environment (Wolff, 2017). Policies and programs that protect the lives of Black women are also crucial. Through policy, equity principles can be introduced or incorporated into law, requiring healthcare facilities to adhere to modifications that allow Black women to receive equal care and access (Figures & Lhamon, 2021). Policy and structural change are crucial to lowering maternal mortality ratios in the US, as current healthcare policies place Black women in positions which "confront significant barriers to realizing the full promise of America," such as the right to live, as said by representatives of the United States White House (White House, 2023).

2.4 Theoretical Frameworks

Two theoretical frameworks were used to guide this study. The Collaborating for Equity and Justice (CEJ) principles, created in 2017, provide six "tools" for creating impactful and lasting change by maintaining equitable partnerships and creating more just societies (Wolff, 2017). These principles are: (1) address structural racism, (2) employ community development, (3) employ community organizing, (4) focus on structural change, (5) build on community-engaged scholarship, (6) build core functions. The six CEJ principles can be seen in Table 2.1.

The Community Capacity (CC) framework was also used to guide and understand maternal health disparities in both portions of the study. Community Capacity was defined by Goodman and his colleagues (1998) as community characteristics that "affect their ability to identify, mobilize, and address social and public health problems" as well as the development and use of "transferable knowledge, skills, systems, and resources that affect community- and individual-level changes consistent with public health-related goals and objectives". There are 10 dimensions to CC: (1) leadership, (2) participation, (3) skills, (4) resources, (5) social and organizational networks, (6) sense of community and of partnership identity, (7) understanding of community/partnership history, (8) community/partnership power, (9) shared values, (10) critical reflection (Goodman, et al., 1998).

Table 2.1: Collaborating for Equity and Justice Principles.

Collaborating for Equity and Justice Principles		
Principle 1	Address structural racism	Explicitly address issues of social and economic injustice and structural racism
Principle 2	Employ community development	Employ a community development approach in which residents have equal power in determining the coalition or collaborative's agenda and resource allocation.
Principle 3	Employ community organizing	Employ community organizing as an intentional strategy and as part of the process. Work to build resident leadership and power.
Principle 4	Focus on structural change	Focus on policy, systems, and structural change.
Principle 5	Build on community-engaged scholarship	Build on the extensive community-engaged scholarship and research over the last four decades that shows what works, acknowledges its complexity, and evaluates it appropriately.
Principle 6	Build core functions	Build core functions for the collaborative based on equity and justice that provide basic facilitating structures and build member ownership and leadership.

CHAPTER 3

METHODOLOGY

3.1 Study Overview

3.1.1 Institutional Review Board

This study was reviewed and approved by the Institutional Review Board at The University of Texas at Arlington (#2020-0326.2).

3.1.2 Study Design

This cross-sectional study used a mixed-methods design. For part one of the research, a survey was administered to gather stakeholder perspectives about equity in the current healthcare system. The second part of this cross-sectional approach involved analyzing federal policies and programs that address maternal mortality and maternal health disparities in high-income countries with the top five maternal mortality ratios. By comparing these policies with the CEJ principles, the study analyzed how US policies compete with those of other opposing countries in terms of equity and racial justice.

3.2 Part One: Study Survey

The study survey was designed to be web-based. The survey was developed by the principal investigator using QuestionPro. The student researcher (MM) identified potential participants. Eligibility criteria for participants required that they be at least 18 years old, have experience in maternal or perinatal health, and be located in the Dallas/Fort Worth area. The stakeholders for this study were considered to be key informants, meaning they had specialized knowledge about a certain field of study (*Key Informant*, n.d.) and most

studies with key informants have small sample sizes. A list of potential key informants was identified by the research team. The student researcher used this list to send emails inviting informants to participate in the study.

The survey included 25 questions with some pertaining to demographics, such as the number of years of experience respondents had, their education level, their general location within the metroplex, and their current role in maternal health. The CEJ principles guided the study to examine the extent to which programs incorporate equity and justice principles. To gather perspectives on how local coalitions, collaboratives, and other groups adhered to the CEJ principles (see Table 2.1), one section of the study survey asked respondents to choose how often they saw each statement, with responses being "almost always," "sometimes," "rarely," or "not sure." Respondents were asked in another section of the survey to consider the community in which they worked and to answer questions based on if they "agree," "somewhat agree," "disagree," or "somewhat disagree." For analysis purposes, "agree" and "somewhat agree" were combined and referred to as "agree," and "disagree" and "somewhat disagree" were combined and referred to as "disagree."

For example, question 21 of the survey asked respondents if they agreed or disagreed with the following statement: "In my community, organizations and other groups actively analyze and reflect on their successes and failures." This question directly analyzed whether respondents saw the fifth CEJ principle, which focuses on scholarship and research, as well as the evaluation of programs (Wolff, et al., 2017). Survey questions also reflected the Community Capacity frameworks. Question 17 asked respondents if they agreed or disagreed with the statement "In my community, Black people have a sense of

belonging to the community and are willing to take action on issues," which aligned with the idea that community capacity involves human interactions that "can be leveraged to solve collective problems" (Chaskin, 1999).

This study was completed over a span of three months, recruiting 25 stakeholders with 16 respondents who completed the study survey. Once the deadline for participation had been reached, analysis of the data began. Analysis was done using SPSS software to calculate frequencies and percentages for the study variables.

3.3 Part Two: Global Document Review

The student researcher (MM) performed a document review between the months of September 2022 and March 2023. This review aimed to highlight healthcare policies and identify a correlation between policies that address the CEJ principles and positive maternal health outcomes. This portion focused only on the first five CEJ principles because the student researcher was unable to accurately assess core functions of the convening party that created each policy/program (Wolff, 2017). The review focused on the five high-income countries with the highest maternal mortality rates: the United States, Canada, France, the United Kingdom, and Australia.

The research team then developed templates to collect and assess data. These data were compiled using web-based research yielded from key terms including "strengthen coverage," "health coverage," "maternal health," "health policy," or "health system." Each of these selected countries were categorized based on characteristics including their maternal mortality ratios, the percentage of their GDP spent on healthcare, the national birth rate, and the gender equality index (higher percent indicates greater gender equality) (see Table 4.1). These measurements served as means of comparison between the countries

to identify which had the highest maternal mortality rate and how it compared with its counterparts.

Next, at least one relevant policy or program of each country was identified using websites such as the Commonwealth Fund, World Bank, Google Scholar, and other credible sources. These programs were described and marked with a "yes" or "no" depending on whether the program or policy included text that aligned with the first five CEJ principles. These data were then compiled into a separate matrix (see Table 4.2) to aid in assessing the extent to which any of the programs/policies aligned with the CEJ principles and whether there were any empirical studies that assessed effectiveness. A final column was included to provide a brief description of each policy/program.

CHAPTER 4

RESULTS

4.1 Part One: Study Survey Results

4.1.1 Demographic Characteristics

The final sample included 16 respondents. Three respondents (18.8%) reported less than 5 years of experience in maternal or perinatal health. 81.25% of respondents reported having an Associate's degree/trade certification or above, with half of the respondents reporting either a Bachelor's or Master's degree. Respondents were asked to choose one or more primary roles in maternal and child health they identified with from a given list. These roles included titles such as "Doula," "Community health Worker," "Midwife," etc. Of these positions, the most selected choices were "Community advocate/activist" (62.5%), "Person with lived experience" (56.25%), and "Program administrator" (50%). Lastly, of the respondents surveyed, 93.8% self-reported as women, with only one respondent choosing "non-binary or gender non-conforming."

4.1.2 Collaborating for Equity and Justice (CEJ) Related Results

According to the survey, 75% of respondents only "sometimes" saw issues of social injustice and systemic oppression explicitly addressed. Half of respondents reported that they "rarely" saw Black families in the community with equal power in determining agendas and resource allocation. A focus on policy, systems, and structural changes, rather than program/service delivery, "rarely" were seen (68.8%) as well. Collaboration that

provides a structure for ownership and leadership among Black families was similarly reported to be seen "rarely" (68.8%).

4.1.3 Community Capacity (CC) Related Results

Most respondents (87.6%) agreed that there are experienced, skilled workers who are willing and able to address issues related to Black maternal and infant health. Regarding the organizing and political skill needed to address the issue of adverse maternal, reproductive, and infant health, respondents had a split vote on whether they agree that their community members were often prepared. A substantial percentage of respondents (74.9%) disagreed that their community had adequate financial, human, and social resources for addressing Black maternal and reproductive health. Most respondents agreed (62.5%) that there have been previous efforts to address these issues, and yet the same percentage (62.5%) of respondents reported that their Black community members did not share values/norms regarding social justice, equity, and collaboration.

4.2 Part Two: Global Document Review Results

4.2.1 Maternal Mortality Among Five High-Income Nations

To make comparisons between policies and programs related to maternal health outcomes in different countries, the maternal mortality ratios, as well as other demographic information, were collected and analyzed, as seen in Table 4.1. The document review found that the United States had a maternal mortality ratio that was at least 2.5 times higher than any other studied country. The birth rate in the US was found to be average (1.6 per woman) compared to other peer countries. Regarding expenditures on healthcare, the United States spent on average two percent less (8%) of its annual GDP than the UK (9.8%), Canada (11.5%), France (11.5%), or Australia (10.3%). However, it was discovered that the GDP

of the US was almost ten times that of the second highest income country studied (UK) (Knight, et al., 2021).

Table 4.1: High Income Countries with Highest Maternal Mortality Ratios

Demographics

Country Name	Maternal Mortality Ratio	National GDP	Health expenditures per capita (% of GDP)	Birth Rate (births per woman)	Gender Equality Index
United States	17.4 per 100,000	$23,315,080.56	8%	1.6	76.30%
France	8.7 per 100,000	$2,957,879.76	11.5%	1.8	78.40%
Canada	8.6 per 100,000	$1,988,336.33	11.5%	1.4	77.20%
United Kingdom	6.5 per 100,000	$3,131,377.76	9.8%	1.6	77.50%
Australia	4.8 per 100,000	$1,552,667.36	10.3%	1.6	73.10%

4.2.2 Maternal Health Related Programs

At least one policy/program that pertains to maternal health in each country was identified. In the United States, the Momnibus Act of 2021 (Taylor & Berstein, 2022), the Preventing Maternal Deaths Act of 2018, and the Helping Medicaid Offer Maternity Services (MOMS) Act of 2019 (Programs for Women, n.d.) were described and compared (Analysis of Federal Bills, 2020). For Canada, a student researcher identified the Canadian Perinatal Surveillance System (Canadian Perinatal Surveillance, 2004) and the Canada Prenatal Nutrition Program. (Canada Prenatal Nutrition, 2021). For the United Kingdom, the MBRRACE-UK (Maternity and Paternity, 2021) and Maternal Disparities Taskforce were examined (Maternal Disparities, 2022). Australia employed the National Health

(Eligible Midwives) Determination (Maternity Care Australia, 2021), as well as the Health Practitioner Regulation National Law Acts (Legislation, n.d.). Lastly, the singular maternal health program found for France (Malâtre-Lansac, 2019) was the "My Health 2022 Bill" (Delahaye-Guillocheau & Ratignier-Carbonneil, 2022).

4.2.3 Maternal Health Program Alignment with CEJ Principles

Of the policies and programs analyzed from each of the five high income countries with highest maternal mortality ratios, the most common CEJ principles to which programs adhered were Principles 3 and 4 (70%), which emphasize intentional community involvement in program action plans, and a focus on policy and systems change, rather than on individuals, respectively. The CEJ principle that was least aligned with programs was Principle 5 (10%), which emphasizes the importance of using empirical studies to support action plans and evaluate programs. The United States' three studied programs aligned with at least two but not more than three of the CEJ principles (including principles 1 through 4). In Canada, only one of the two studied programs aligned with a single CEJ principle (principle 3). In the UK, both studied programs aligned with four of the CEJ principles (principles 1 through 5).

Table 4.2: Alignment of Maternal Health Policies/Programs with CEJ Principles

Policy/Program	Country	CEJ 1	CEJ 2	CEJ 3	CEJ 4	CEJ 5	Empirical effectiveness studies? (Y/N)	Description
Momnibus Act of 2021	United States	YES	YES	NO	YES	NO	NO	This act has multiple bills that highlight racial inequity in healthcare. It addresses the community members that were affected and in turn encouraged the bill to be created. It focuses on policy change in multiple different sectors.
Preventing Maternal Deaths Act of 2018	United States	NO	NO	YES	YES	NO	NO	This act does little to actively prevent maternal deaths. Its focus is on monitoring the frequency of maternal deaths, but it does call on organizations to help in the surveillance.
Helping Medicaid Offer Maternity Services (MOMS) Act of 2019	United States	NO	NO	YES	YES	NO	NO	This act does not focus on racial contributions to health inequity. It mainly looks at how to expand Medicaid coverage to women for one year after birth.
Canadian Perinatal Surveillance System	Canada	NO	NO	NO	NO	NO	NO	This program monitors the health outcomes of all pregnancies, regardless of if the baby is carried to term. It does not mention Black women at all.
Canada Prenatal Nutrition Program	Canada	NO	NO	YES	NO	NO	NO	This program is aimed at ensuring pregnant and postpartum moms have sufficient nutrition. It mentions culturally sensitive or disadvantaged groups, but in Canada that mainly implies Indigenous women and immigrants.
Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK (MBRRACE-UK)	United Kingdom	YES	NO	YES	YES	YES	YES	This program notes the contribution of racial inequity towards maternal health care. It calls on policy makers, individuals, and organizations frequently. It also lists multiple studies that contribute to the data it presents.

Maternity Disparities Taskforce	United Kingdom	YES	YES	YES	YES	NO	NO	The taskforce was recently created. They are focused on bringing in experts in policy and healthcare and utilizing midwives as a main way to help reduce inequity in maternal healthcare.
The National Health (Eligible Midwives) Determination 2010	Australia	NO	YES	YES	YES	NO	NO	This act mainly focuses on the implementation of midwives as a more credible healthcare provider. They focus on licensing them throughout Australia in a more equitable and consistent manner. At the end of this document, it does mention that they will review the framework after 18 months to evaluate its success based on case studies.
Health Practitioner Regulation National Law Acts	Australia	NO	NO	NO	YES	NO	NO	This law works to create more standardized care across Australia. It does not mention race, but it does try to improve maternal healthcare.
My Health 2022 Bill	France	NO	NO	YES	NO	NO	NO	This bill focuses mainly on expanding health data online, creating more opportunities for medical students to practice and study. There is no highlight on race, justice, or equity.

CHAPTER 5

DISCUSSION

5.1 Study Limitations

There are several limitations to this study. First, the survey was limited in size which therefore limited generalizability. Nevertheless, the response rate of 64% is considered adequate given the nature and purpose of the study. In addition, not all stakeholders who were recruited completed the survey, which may have left out important perspectives. Second, because most French policies/programs are written in French, the student researcher's analysis was limited by a language barrier. The student researcher did not have language translation resources available and therefore may not have captured important French healthcare programs.

5.2 Implications for Research and Policy

Despite the limitations, the present study findings have important implications for maternal health policy and research. First, in terms of maternal health policy, the study found numerous gaps in the explicit addressing of racial disparities in multiple countries (see Table 4.2). In addition, the study found that community development and leadership throughout policy development and implementation is largely unseen. In nearly all policies that were studied, there was a lack of evidence-based research and evaluation practices. These findings suggest there is a need for promotion of community organizing throughout the creation of healthcare programs, especially in communities where injustice is prevalent. In order to see a decrease in racial inequities in healthcare, this study suggests an approach

that involves more research of the creation and implementation of successful healthcare programs, as well as more elaborate systems of evaluation to ensure that healthcare policies and programs protect their communities. Lastly, the study findings suggest a need for future maternal health research focused on community organizing tactics as well as research surrounding potential restructuring of resource allocation for maternal healthcare.

5.3 Conclusion

This study suggests that in order to improve the maternal health outcomes of Black women, changes must be made to the allocation of resources, community organization, and structural and policy change, rather than focusing on individual factors relating to healthcare access. In addition, despite the US having comparable adherence with CEJ principles in recent policy development to other countries, changes must be enacted in the actual implementation of equitable healthcare to ensure improvement in health outcomes for Black women in the US.

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BIOGRAPHICAL INFORMATION

Madison Mitchel graduated from Hallsville High School and began attending The University of Texas at Arlington in 2019. There, she earned an Honors Bachelor of Arts in Interdisciplinary Studies focused on Public Health and Global Studies with a minor in Spanish in hopes of providing healthcare to minority populations through the implementation of policy change and increased need-based programs. Upon graduation in May 2023, Madison plans to pursue a career in public health in the Dallas-Fort Worth metroplex or wherever she feels the Lord calling her.