Reproductive Injustice: Abortion Restrictions and Maternal Mortality Rates

Calinda Carolina Ayala

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Chair, Dale W. Wimberley
Co-Chair, Stacy Vogt-Yuan
Liora O. Goldensher

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ABSTRACT

This research establishes a statistically significant connection between maternal mortality rates and abortion restrictions from a reproductive injustice perspective, integrating the theory of necropolitics. Using a time-series cross-sectional analysis of all 50 U.S. states from 2009 to 2019, this study highlights the impact of restrictive abortion policies during a period of intensified legislative activity, including pre-abortion counseling requirements, TRAP laws, and trigger laws. Data from the Guttmacher Institute's hostility scale and the Institute for Health Metrics and Evaluation's maternal mortality statistics reveal that states with higher hostility toward abortion experienced increased maternal mortality. Notably, a 1% increase in state hostility is associated with a 0.45% rise in overall maternal mortality rates ($p < 0.001$). The analysis further demonstrates that each marginalized racial and ethnic group examined face heightened risks from higher abortion hostility, with maternal mortality rising among Hispanic women by 0.40% ($p < 0.001$); among non-Hispanic American Indian and Alaskan Native women increasing by 0.29% ($p < 0.05$); among non-Hispanic Asian, Native Hawaiian or Other Pacfic Islander women by 0.53% ($p < 0.001$); and non-Hispanic Black women by 0.39% ($p < 0.001$) per 1% increase in state hostility. However, the largest increase was found among non-Hispanic White women ($p < 0.001$). This study contributes to reproductive justice scholarship by incorporating a feminist and sociological perspective on the relationship between abortion restrictions and maternal mortality, particularly as moderated by race and ethnicity. The findings call for urgent policy interventions to dismantle systemic inequities in healthcare access, ensuring the protection of reproductive rights and the reduction of maternal mortality across all communities.

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GENERAL AUDIENCE ABSTRACT

This study explores how abortion restrictions affect maternal mortality rates in the United States, focusing on the period between 2009 and 2019. It shows that stricter abortion laws, such as requirements for pre-abortion counseling, targeted regulations on abortion providers, and laws designed to ban abortion if federal protections are overturned, are linked to higher maternal death rates. States with more restrictive abortion policies had notable increases in maternal mortality, with even greater risks for certain racial and ethnic groups. For example, for every 1% increase in state-level hostility toward abortion, overall maternal mortality rose by 0.45%. The impact was pronounced for Hispanic women, non-Hispanic American Indian and Alaskan Native women, non-Hispanic Black women, and non-Hispanic Asian, Native Hawaiian, or Pacific Islander women. Among non-Hispanic White women, the increase was even greater. By examining the relationship between abortion restrictions and maternal health through a feminist and sociological lens, this research highlights systemic inequalities in healthcare access. The findings emphasize the need for policies that protect reproductive rights and improve maternal health outcomes for all communities, especially those historically underserved.

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PROBLEM STATEMENT

How do restrictive abortion policies affect state-level maternal mortality rates in the U.S.? That is the question this proposed study aims to answer. Such an investigation seeks to illuminate how abortion restrictions serve as one driver of reproductive injustice, making healthcare resources less available in ways that lead to increased maternal mortality–making the precarious lives of ethnically diverse women more precarious. Additionally, analysis for the selected period of 2009-2019 will help establish the relationship between abortion restrictions and maternal mortality before the COVID pandemic and before a major political reversal in the Supreme Court decision on Dobbs *v* Jackson Women's Health, as well as potentially providing a point of comparison for future research on post-pandemic and post-Dobbs conditions (Belluck 2024; Bouie 2024; Cohen and Joffe 2023; Leonhardt 2024). Historically, increased abortion restrictions are intertwined with increased maternal mortality rates (Reagan 2022), particularly for black women (Roberts 2017), but what characterizes that association, and therefore, what is the significance of restrictive abortion policies for reproductive health beyond abortion?

Three different theories note that abortion restrictions operate as family policing (Roberts 2017), reproductive control (Suh 2021), and criminal abortion policies (Reagan 2022). All of these focus on the ways in which abortion restrictions have created both gendered and racialized spaces wherein marginalized communities are discriminated against through the weaponization of their reproductive rights and sent to their deaths. Achille Mbembe calls this concept, "necropolitics." Necropolitics refers to the use of social and political powers that ultimately dictate who is allowed to live and who must die (Mbembe and Meintjes 2003). Abortion restrictions shape who lives and who dies. Accordingly, in this study, I treat maternal mortality as a result of reproductive violence exercised through abortion restrictions. An additional importance of this project is to situate abortion restrictions relative to other forms of reproductive violence that result in maternal mortality.

CHAPTER I: LITERATURE REVIEW

Biopower, Gendering, and Death

Let's first consider Foucault's (1978) concept of bio-power in combination with Joan Acker's (1990) theory of gendered organizations. Foucault's (1978: 140-141) definition of bio-power is the connection of biological practices to economic and political powers such that social institutions can weaponize it against an individual's sex and body. For example, the government utilizes demography to monitor and control bodily practices such that "between the state and the individual, sex [becomes] an issue, and a public issue no less (Foucault 1978: 26)." By collecting data on abortions–opinion pieces, population results, voting results, political debates, etc.–demographers and researchers participate in the use of bio-power and sex discourse. Sex is operationalized by discourse, which can be categorized, talked about, and accounted for. Through repeated discourse, bio-power establishes itself within systems of inequality, such as gender.

Gendering occurs when 1) an institutionalized gender divide is constructed and maintained by the family, labor markets, and the state, 2) symbols and images are constructed to explain, express, reinforce, or oppose those gendered divisions, 3) interactions among each gender type reflect patterns of dominance and submission, 4) divisions of gender, symbols, and interactions construct gendered components of individual identity, and 5) social structures are created and conceptualized under the influence or guide of gender (Acker 1990). Given that social institutions derive from a system of beliefs and/or structural components, gender can be interpreted as a social institution. As Acker (1990) discusses, gender is institutionalized and can be employed to support inequalities within an organization (systems of inequality are socially constructed and, therefore, interlocked). A system of inequality based on gender is shown through gender relations–rights, responsibilities, and identities of men and women concerning one another assigned to them by living within society–because they influence how power and identities are formed and impact one's life circumstances. One group benefits at the expense of the other, and privileges may become invisible when things such as gender are embedded into institutions. This institutionalization gives gender inequalities an air of inevitability, creating the perception that such systems are "natural" and unquestionable.

Compare this to Foucault's discourse; power is the invisible privilege. In how gender is constructed and maintained, discourse does the constructing and maintaining within families, labor markets, and states. Discourse contains the necessary symbols and images of dominance and submission- it is the interactions that construct and deconstruct. Social structures rise because of the discourse of beliefs, which helps construct the normalization of topics such as sex and the oppression of women as "the other." Consider Dorothy Roberts' (1999) discussion of white eugenicists and Du Bois' promotion of birth control. For white eugenicists, it was a matter of oppressing black birth rates and eliminating the 'welfare queen,' but for Du Bois, it was a matter of black women exercising their right to bodily autonomy and financial independence. Through the power of discourse and gendering, society can disembody women from their

bio-power or bodily autonomy. Current abortion restrictions rely on withholding bodily autonomy through requirements such as pre-abortion counseling, waiting periods, medically unnecessary ultrasounds and restrictions on medications, public and private insurance bans, unnecessary regulations on facilities, and unconstitutional bans on viability (Nash et al. 2018). Reviewing the data on such abortion restrictions that withhold bodily autonomy, states with four or more abortion restrictions have higher maternal mortality rates than states with three or fewer (Addante et al. 2021). It is likely that by reducing abortion restrictions (providing women with their right to bodily autonomy), the maternal mortality rate is reduced (Latt, Milner, and Kavanaugh 2019).

When policies serve to control mortality, such social and political forces determine who lives and who dies. This is known as necropolitics, a term coined by Achille Mbembe. Mbembe and Meintjes (2003) argue that necropolitics enforces state-sponsored political violence, which includes the right to kill, the right to enslave, and the right to expose other people and citizens to mortal danger and death. By doing so, citizens are not awarded autonomy over their lives, and therefore, their bodies suffer from social and political deaths (Mbembe and Meintjes 2003). Women are sent to their social and political deaths by abortion restrictions, a form of reproductive violence and an example of necropolitics.

Abortion's Precarious History: Pre-Roe

The year was 1742, and Sarah Grosvenor, a farm girl from Connecticut, had confided in her sister that she was "taking the trade." The metaphor was typical for mid-eighteenth-century New England and was known to convey the use of purchasing and ingesting drugs for the sole purpose of an abortion (Reagan 2022: 9). Euphemisms were common to describe the act, representing that women governed their bodies in private and were reflective of English common law, and therefore colonial law, at the time (as the Revolutionary War lasted from April 19th, 1775 until September 3rd, 1783). Prior to 1803, abortion was not considered a crime if induced before "quickening," according to Great Britain (Acevedo 1979). Quickening occurs when the mother feels the baby's movements and is often marked as the start of life (Reagan 2022: 9). However, that would soon change in Connecticut thanks to the Ammi Rogers sex scandal that shocked the state.

It was 1817, and Ammi Rogers had been called to the bedside of a dying grandmother, where the granddaughter, Asenath Smith, sat patiently. Rogers's reputation preceded him, an Episcopal preacher known for seducing female congregants as well as pissing off religious leaders on his outspoken position in support of the "separation of church and state" affairs. For many onlookers, Asenath Smith didn't stand a chance when Rogers set his sites on her. They were set to marry, and like most couples in New England at the time, premarital sex was not controversial if it resulted in vows. As expected, Asenath became pregnant, but Rogers reneged and provided an ultimatum to marry: an abortion was necessary. When the pills he provided didn't work, he attempted to complete the abortion himself with an unknown tool, which also didn't work. Asenath delivered a stillborn child, and Rogers was subsequently arrested and put

on trial in 1820. Though what he did wasn't considered illegal (seduction and abortion after quickening were not within statutes), the state wished to hold him accountable for his horrific behavior and actions against Asenath. The first trial fell apart when he kidnapped both witnesses, Asenath and her sister, but in the second trial, he was convicted of sexual assault and sentenced to two years thanks to the testifying of Sam Wheeler, one of Rogers's slaves.

In 1821, Connecticut passed "a bill banning medicinal abortion after quickening, with those who provided the medicine facing prosecution (Brockell 2019)." There's no question Ammi Rogers was an evil man and had done reprehensible things to young women, but is it responsible to pass a law under the actions of one individual? This was never about one woman. Illinois agreed with Connecticut's ruling, and in 1827, Illinois "prohibited the provision of abortifacients," a poison control measure designed to protect pregnant women (Reagan 2022: 10). What's important to note about both laws is that women would not be punished for inducing abortions and that the concept of quickening was legitimized within the state legislature. This was reflected across the United States, and despite the ban on sales of abortifacients, advertisements were riddled with them (Reagan 2022: 10). They could be purchased through the mail from pharmacists and physicians. When drugs failed, women still could seek out physicians who specialized in providing abortion procedures. In the 1830s, one New York City woman became a famous abortionist for selling "Female Monthly Pills" and later opened offices in Boston and Philadelphia in the 1840s (Reagan 2022: 10). It is important to note that the clientele of such busy clinics often were "married, white, native-born Protestant women of the upper and middle classes (Reagan 2022: 11)."

One hundred years of abortion history, and I have yet to mention abortion methods apart from colonizers. It is easy to bulldoze over history and to claim that abortion was not controversial until it became a front-page sex scandal, but women have always struggled with their reasons for having an abortion. "As early as 1714, native american [sic] women [had] reasons [that] included inability to provide for a family, shame, fear of losing social status, and/or a desire to avoid the responsibilities and cares of parenthood (Acevedo 1979)." Black root and red cedar were effective abortive methods utilized by many Native American tribes but were not 'officially recognized' until the early 1800s when colonizers began comparing it to their knowledge of Sabina or Savin (Acevedo 1979). Similar to indigenous populations, black slaves utilized 'folk methods' and 'root gotten from the woods' in herbal remedies (Acevedo 1979), like cotton root (Reagan 2022: 9). It was a way to protest and protect themselves against forced procreation at the time, as they were "subject to the laws of their owners over the laws of the newly established nation (Acevedo 1979)." Free was not really free in 1776 nor in 1861 when the Civil War began. Women dominated reproductive healthcare at this time, and midwifery was notably interracial: Nearly half were black women, the other half being indigenous and white women (Goodwin 2020). Even as early as 1691, when women in Virginia were being persecuted for abortions, juries were full of matrons (Acevedo 1979). "In the wake of slavery's end, skilled black midwives represented both real competition for white men who sought to enter the practice of child delivery and a threat to how obstetricians viewed themselves (Goodwin 2020)."

In the 1820s and 1830s, male physicians and practitioners practicing 'heroic' medicine were accused of being elitist (Reagan 2022: 11), trained to use forceps and other technologies–developed by gynecologists like Dr. Marion Simmons, who reprehensibly and repulsively experimented on enslaved black women–within the modern convenience of hospitals (Goodwin 2020). Women, more specifically black women, were barred left and right from practicing such 'heroic' medicine: "Successful racist and misogynistic smear campaigns, cleverly designed for political persuasion and to achieve legal reform, described Black midwives as unhygienic, barbarous, ineffective, non-scientific, dangerous, and unprofessional (Goodwin 2020)." One story from 1835 stands out, particularly for white women. Of 76 physicians in Boston, two were female practitioners until they were both denounced as witches, with one being sent for execution (Acevedo 1979). It was at this time, too, that white birthrates began to fall (Reagan 2022: 11), and they would drastically decline until the 1850s (Acevedo 1979). The antiabortionists had a field day campaigning for white procreation at the fear of being overpopulated by immigrants flooding the United States (Reagan 2022: 11). Dr. Horatio R. Storer championed such misogynistic and racist rhetoric (Reagan 2022: 11) and led antiabortion campaigns alongside the infamous Dr. Joseph DeLee in order to destroy midwifery, especially for black women, and uphold white male supremacy (Goodwin 2020). At this point, we are forced to recognize the 19th-century feminist movement, which demanded women's representation in medical professions and held men accountable under a single standard of sexual behavior by virtue of moral superiority (Reagan 2022: 12).

'Voluntary motherhood' was a slogan that echoed across women's movements, with the idea of chastity until marriage followed by monogamy and moderation, which addressed men's sexual violation of their wives and women's desire to control childbearing (Reagan 2022: 12). In response, Storer compared abortion to prostitution based on moral superiority. What's more, the 19th-century feminist movements did not outright defend abortion, but they were nonetheless blamed for allowing it to occur because they defended women's rights to choose childbearing (Reagan 2022: 12). The concept of quickening was quickly conflated with barbarism since it was a process that could not be standardized or measured across *all* women. Storer sought to undermine the previous definition of abortion, which was "the restoration of the menses prior to quickening" to "inducing a miscarriage after quickening" while at the same time delegitimizing the concept of quickening and equating abortion to infanticide (Reagan 2022: 12). The antiabortion response was a way to oppress women's political power by weaponizing their bodies against them. By 1873, the Comstock Act was passed to prevent the mailing of contraceptives, instruments, and remedies related to the act of abortion (Reagan 2022: 13). Though seemingly unrelated, the Page Act was passed in 1875 to restrict Chinese women from entering the United States, reflecting fears of immigration and increased nationalist thinking (Goodwin 2020). "Regular physicians won passage of new criminal abortion laws because their campaign appealed to a set of fears of white, native-born, male elites about losing political power to Catholic immigrants and women (Reagan 2022: 13)." In more modern times, fears of a white genocide.

Such views were popular in the 1880s, and there was no shortage of papers publishing investigations and think pieces on criminal abortions. In 1888, the *Chicago Times* published the first in-depth study of illegal abortions, documenting details of Chicago's abortion underground in 25 published stories (Chicago Daily Times 1888b). The purpose of the study, which later became a series labeled 'Infanticide,' was to highlight the hypocrisy of the upper class and their use of abortion services by respectable doctors despite their criticism of overuse among immigrants and the poor (Reagan 2022: 50). The reporters wanted to expose the underground practices of Chicago's elite (Chicago Daily Times 1888b) while simultaneously developing a dangerous nativist narrative. Though an incredible amount of investigative journalism claims to represent the immigrant masses, they do so behind the same antiabortion argument Storer weaponized: fear of becoming the white minority. Dangerously and not without consequence, the 'Infanticide' series sought to name all reputable physicians and midwives who provided abortions or were involved in the process, whether through referral or the act itself (Chicago Daily Times 1888a). As stated earlier, the situation was eerily similar to the 1835 Massachusetts witch hunt where two women physicians were accused of witchcraft, one disbarred, and the other sent to hang (Acevedo 1979). It would appear that it only took 50 years for the white male physicians to go from championing white male supremacy in medical practice to becoming victims of their nativist narratives, hidden within the weave of anti-abortion campaigning.

As we reach the 1900s, increased efforts to police criminal abortions were the responsibility of physicians. Police officers and district attorneys needed the cooperation of medical practitioners to uphold the law against abortion. At this time, it is critical to reflect on the criminality of abortion: police officers made their cases with dying declarations of women on death's door due to botched abortions, most being working-class women (Reagan 2022: 119). Physicians were critical in the collecting of dying declarations because that got officers in the hospital wings to conduct investigations. More importantly, the person with the most power in such investigations was the coroner, as the cause of death, 'murder by abortion,' increased the chances of juries convicting poorly skilled physicians or midwives (Reagan 2022: 119). If a physician decided not to report knowledge of an improper abortion to the police or, more significantly, the coroner, they could be charged as accessories to murder (Reagan 2022: 119). It would appear, then, that no matter your stance on abortion as a physician, you were threatened to participate in the legal process of criminalizing them all the same.

The Great Depression, 1929 to 1941, brought about with it new social and political sentiments surrounding abortion and the need for abortion specialists, especially in light of the drastic cost of childbearing–notably grim to those who had children at the start of the Depression–and increased maternal mortality at the result of self-induced abortions. As Reagan (2022: 133) notes:

> The Depression years make vivid the relationship between economics and reproduction. Women had abortions on a massive scale. Married women with children found it impossible to bear the expense of

> another, and unmarried women could not afford to marry. As young working-class women and men put off marriage during the Depression to support their families or to save money for a wedding, marriage rates fell drastically. Yet while they waited to wed, couples engaged in sexual relations, and women became pregnant. Many had abortions.

The Great Depression is perhaps the most remarkable example of social forces conditioning women's reproductive options, as many women felt they had *no choice* but to get an abortion (Reagan 2022: 134). In fact, in 1936, the world's first abortion insurance came about in Newark, New Jersey, with 800 dues-paying and card-holding members with a copay of $75 plus dependent on the gynecological service (Reagan 2022: 134). Thus, the drastic impact of the Great Depression helped legitimize the idea of contraceptives: What can we do when we can't afford children and celibacy is impossible, but the burden of abortion is too much to bear? The U.S. birth control movement maintained itself as an alternate option to abortion and as the solution to illegal abortions. Feminists and the left supported and modeled themselves after Europe, having passed birth control reform and utilized that as a stepping stone to legalize abortion. The red scare following WWI turned into a catastrophe, however, as the U.S. birth control movement took a conservative stance in support of delegitimizing abortions in order to situate themselves fairly in the eyes of the media (Reagan 2022: 142).

With World War II around the corner, women moved into war-time jobs, taking over for the men overseas. Factory jobs were brutal and still relied heavily on dismissing pregnant women from the workplace- abortions were a necessary option still unavailable to women. The abortion movement renewed temporarily, as it always seems. If the pattern does not appear clear at this point, allow me to explain. Progressions for women in the workplace were just beginning, leaving traditional gender roles behind; new freedom was blooming, and abortion access was mushrooming, but there was a problem. Progression for women was occurring. In response, American society turned to pronatalism and traditional gender roles and fought for such ideals with the same old antiabortion arguments with a new name: McCarthyism. McCarthyism, as a response to communism, was a way to destroy "the labor, peace, and interracial movements (Reagan 2022: 163)." It is critical for our understanding of abortion's history that we notice how tied abortion is to the progression of human rights, especially given that it has been weaponized to argue for the stripping of bio- and political power from anyone apart from the white man. Abortion's name has been dragged through sexual misconduct cases, pushing women out of the medical profession, pushing women back into domestication, and so forth. It is all too easy to masquerade true intent with a boogeyman; for nativists, it is abortion. So, how did we move forward?

As all critical moments in history start, abortion reform took a big step in 1955 at a small, unofficial national conference for physicians to air the problems of induced abortions hosted by Planned Parenthood. They signed a collective statement calling for criminal abortion reform to apply the law on therapeutic abortions to extend to psychiatric reasons officially, but also in

support of humanitarian rights (Reagan 2022: 220). Ironically, some argue that the pressure for physicians to legalize abortions was to erase the consistent anxieties that followed applying the laws of therapeutic abortion to their practice (Reagan 2022: 220). Criminal abortion laws were purposefully muddied to allow police officers to crack down on abortion by punishing physicians. In truth, this kind of law punished women but significantly hurt populations of black women, with their maternal mortality rates skyrocketing during the Great Depression due to illegal self-induced abortions (Reagan 2022: 135). Interestingly, some locations required proof of marriage in order to provide birth control or abortions (Reagon 2022: 196). If you couldn't afford to be married, you had to somehow gather the funds to trick your doctor into thinking you were as one University of Chicago student mentions. She paid for secrecy and her privacy with a fake wedding ring (Reagan 2022: 196). It seems that gender/race/class oppression is reflected in the ways laws have navigated controlling abortions and even contraceptives.

In 1959, the American Law Institute heard the cries of those 1955 physicians and proposed a reasonable correction to therapeutic abortions such that it could become standardized medical practice across the United States. Now, we turn to the 1969 court case, *Doe* v. *Scott,* spearheaded by spunky lawyers Susan Grossman and Sybille Fritzsche. They intended to represent Illinois's impoverished populations and better the lives of these women. Class inequality guided their every argument to show how unconstitutional Illinois criminal abortion laws were. A wealthy woman could fly out of the country to find an abortion if she were denied in the States, but a poor woman could end up with her unwanted pregnancy. Criminal abortion laws encourage unequal treatment access, violating the Constitution's equal protection provisions. They also argued that criminal abortion laws violated the Women's Suffrage Amendment and the Civil Rights Act as women were continuously subjected to male lawmaking and took away women's bodily autonomy. Furthermore, they cited *Griswold* v. *Connecticut* to argue that state laws could not violate the zone of privacy surrounding marital relationships. Though Grossman and Fritzche had been coached to argue from a place of privacy so as not to appear too controversial or polarizing, the women disagreed with this approach, leading to class inequality and placing privacy at the bottom of the barrel. In 1971, their argument would pay off as the Illinois Supreme Court stated that during the first trimester, the state could not intervene with a woman's right to abortion but refused to address class inequality concerns in their brief (Reagan 2022: 240).

The celebration lasted 10 days before the first appeal won their injunction. As appeals piled up, therapeutic abortion lines grew long as Illinois hospitals became overwhelmed with requests. The buck was passed down to social workers screening patients to decide whether their needs met the criteria for the law's reform. Not to fear, however, as in 1970, Alaska, Hawaii, and New York decriminalized abortion instead of casting reform (Reagan 2022: 241). Between 1971 and 1972, over thirteen thousand women traveled from Illinois to New York to receive a safe abortion, with out-of-state abortions in New York sitting at 65% (Reagan 2022: 241). In January 1972, the original Illinois appeal would win, and the court ruled that suicidal intentions are not grounds for a therapeutic abortion for a teenager. Soon after, Jane, the prominent underground

abortion system in Chicago, was raided. Police detained 50 people for questioning, 3 of whom were preparing for their abortions, and arrested 7 Jane members. It seemed like raid after raid was occurring and that the antiabortion movement was gaining even more momentum, but this couldn't be further from the truth. Individuals across the country were angry, and the pro-choice voices were loud. In January 1973, Roe *v* Wade held that the Due Process clause of the Fourteenth Amendment contains the right to privacy so that "a person may choose to have an abortion until a fetus becomes viable"; a fetus becomes viable, can live outside the womb, between 24 and 28 weeks post conception (Justia 2003). More importantly, *Doe* v. *Bolton,* in a companion opinion, declared therapeutic abortion committees unconstitutional, violating women's rights to healthcare and physicians' rights to practice (Reagan 2022: 245). But, once again, lawyers and activists held bitter tongues for the Supreme Court's refusal to acknowledge that criminal abortion laws were discriminatory and created race, gender, and class inequities that would pervade the legalized landscape for abortion. As Reagan (2022: 245) so eloquently puts it:

> The Court's decisions were less than what feminists had wanted, because they left abortion in the hands of physicians, because women's rights were "balanced" against the rights of the state and limited by a technologically determined "viability" of the fetus, and because the inequities of class were ignored.

The Morbidity of Maternal Mortality and the Welfare System

Maternal mortality is inextricably linked with abortion's precarious history, as both are undeniably tied to reproductive justice, or rather, reproductive injustice. The earliest documented study to consider maternal mortality in the United States was reported in 1931 by the Children's Bureau. This study specifically highlighted illegal abortions across 15 states that contributed to 14% of the nation's maternal mortality rates from 1927 to 1928 (Rothert 1934). What's important to consider about this study is its leading up to the start of the Great Depression, where additional studies estimated that 12.8% of maternal deaths were the result of septic abortion (Rothert 1934), abortion increased in absolute numbers and proportion to other causes of maternal mortality (Rothert 1934), and that 15,000 women died every year as a result of abortions gone wrong (Rothert 1934). Again, at this time, abortions were criminalized, and studies reviewing abortion were actually examining illegal abortions, even if not explicitly stated. Often, these arguments reflected the need for abortion reform and, overall, were a part of the need for better birth control.

In fact, as early as 1919, conversations about birth control dominated black discourse (Roberts 1999: 83) such as the one-act play, "The New Emancipation: The Negroes Need for Birth Control, as Seen By Themselves" in the *Birth Control Review,* Margaret Sanger's magazine–notably associated with and appealed to white supremacy and eugenics (Johnson 2021)–which was established just two years earlier. Similarly, England in the 1920s recognized abortion as a legitimate means of birth control for working-class women (Reagan 2022: 140). In

1922, *The Crisis* magazine–created in 1910 and recognized as an official publication of the NAACP–published an argument by Dr. Du Bois on black families adopting birth control because black infant and maternal mortality rates were double that in Harlem than in any other city in New York at the time. This sentiment continued into 1932, as the *Birth Control Review* published another special edition advocating for black people's birth control to reduce maternal and infant death rates, maintain their economic independence, and improve living standards with contributions from Dr. Du Bois once more (Roberts 1999: 83-84). Dr. Du Bois was one of the first black leaders to adamantly argue for birth control for black women, weaving in arguments of financial security and independence with bodily autonomy for black women (Roberts 1999: 84). For Dr. Du Bois, it was not a matter of eugenics as it was for Margaret Sanger and her magazine. "White eugenicists promoted birth control as a way of preserving an oppressive social structure; Blacks promoted birth control as a way of toppling it (Roberts 1999: 86)."

The first decline in maternal mortality rates is noted to have occurred somewhere between the late 1880s and early 1910s due to newly introduced antiseptic and aseptic surgical techniques (Loudon 1988). The United States still had the highest maternal mortality rates in the world in the early 1930s, with the second major decline coming at the end of the 1930s due to sulfonamides (Loudon 1988). Between the 1930s and 1940s, penicillin and blood transfusions contributed to the dramatic decline in maternal mortality rates overall and those following abortion (Loudon 1988), but this decline was short-lived. From 1951 to 1962, New York City data reported double the number of absolute abortion deaths, and a similar pattern was discovered for the rate when standardizing to one thousand live births (Gold, Jacobziner, Nelson, and Erhardt 1965). Mortality data from this report quickly revealed racial inequalities to safe abortions, as nearly four times as many women of color died from abortions as white women did, with abortion deaths accounting for half of the maternal deaths documented for women of color compared to the 25% of maternal deaths for white women (Gold 1965). The racial inequities perpetuated by health services across the United States become overtly apparent when reviewing such statistics. Abortion-related deaths came as the result of criminalizing abortion, dramatically affecting the lives of poor minority women, especially black women- their maternal mortality rates were four times that of white women (Reagan 2022: 213).

Sterilization became a solution for solving unwanted pregnancies and abortion-related deaths, a once-legal enterprise sponsored by eugenicists during the first uproar of the birth control movement. By the 1960s, many of the sterilization laws had been repealed; however, that didn't stop government hospitals and private doctors from illegally practicing and mutilating the bodies of black women. In 1965, it was stated that "60% of the Black women in Sunflower County, Mississippi, were subjected to postpartum sterilizations at Sunflower City Hospital without their permission (Roberts 1999: 90)." Trickery and deceit were common in the South over forced sterilizations, but this trend existed further north as well. In 1972, the *Boston Globe* published an article on the Boston City Hospital for "performing excessive and medically unnecessary hysterectomies on Black patients (Roberts 1999: 91)." Excuses for forced sterilizations ranged from training purposes to inadequate explanation of procedures and forms to

falsifying medical records (Cobb 1972). In New York City, it was the same; elective hysterectomies were performed on mostly poor black and Puerto Rican patients to train residents (Hartmann 1995: 255). In 1973, an official study published that city hospitals were subjecting poor black women to unnecessary and forced surgical sterilizations without providing adequate information for the procedure or alternatives to birth control (Aptheker 1974: 41). Doctors who committed such horrific crimes all had the same underlying logic: they were just looking to solve the "welfare roll problem" (Roberts 1999: 92-94). In 1976, the Hyde Amendment was one such solution wherein federal funding provided by Medicaid blocked funding for abortion services. "The number of federally funded abortions dropped from nearly 300,000 in 1977 to under 300 in 1992 as a result of the amendment (Roberts 1999: 231)."

While Roe *v* Wade's decision was monumental to women's private reproductive decisions, it did not protect a welfare mother's decision to have a baby. Women too poor to pay for private health care were left out of the courtroom that day. The prevailing decision of Roe *v* Wade highlights the Fourteenth Amendment's negative right to unjustified intrusion rather than the positive right to lead a free life (Roberts 1999: 229, 294-295). In this way, it also restricts constitutional protections to state interference. Therefore, the government is not obligated to provide social conditions and resources adequate to exercise individual liberties or protections apart from state forces. Government benefits are not constitutional rights, despite how necessary they may be for some of us to stay alive. In 1977, Maher v. Roe denied Connecticut's public funding to abortions that were deemed medically unnecessary but would provide funding for childbirth expenses. Despite it being women's constitutional right, Connecticut was allowed to encourage women to have more children while simultaneously discouraging them from having abortions by weaponizing their public funding. By 1994, the Hyde Amendment faired no better for women–from 1994 to 2000, abortion rates increased by 25% for poor women (Jones, Darroch, and Henshaw 2002)–despite including provisions to have Medicaid pay for abortions if it was the result of rape or incest, and endangers the mother's life.

Rewinding to 1970, the Public Health Service Act gave poor women access to reproductive health services as part of Title X, including information about abortion and abortion providers. In 1988, the Reagan administration delivered "the Gag Rule," which banned clinics protected under the Public Health Service Act of 1970 from providing any information related to abortion, period. It required them instead to provide reproductive information related to the health and life of the mother and her unborn child. The Clinton administration repealed "the Gag Rule" in 1993, but the damage was already done, especially for black women. In 1987, of the four million women who used a Title X clinic for family planning services, 28% were black, meaning that over half of black women in the U.S. at the time would have been denied information and crucial health services (Mosher 1990). From 1982 to 1988, black women were more likely to rely on publicly funded clinics than white women because they were less likely to have private health insurance, they lacked sufficient income to maintain a private physician relationship, and they were more likely to have noncommittal relationships to doctors (Mosher

1990). Additionally, fewer than half of black patients visited private doctors and relied much more on emergency room visits for health care than white patients (Davis 1990).

Four years prior to the enforcement of the Reagan administration's "Gag rule" in 1988, they enforced what reproductive activists called "the Global Gag rule," otherwise known as the Mexico City Policy of 1984. The policy's goal was to reduce the number of abortions in developing countries, or at the very least, the U.S. 's sponsoring of such. The policy enforces that foreign non-governmental organizations (NGOs) must not perform or promote abortion as part of family planning using any source of funds (U.S. or otherwise) in order to receive global family planning funding from the U.S. Performing or promoting abortion services as part of family planning extends to abortion service delivery, referral to legal abortion services, abortion advocacy, and abortion research (Suh 2021: 7). Since 2003, the U.S. has provided over two-thirds in global family planning aid (Grollman, Cavallaro, Duclos, Bakare, Martínez Álvarez, and Borghi 2018), therefore making the Mexico City Policy the largest threat to the world's family planning services because of its total control over reproductive health (Suh 2021: 7). Just like in Connecticut, the U.S. was weaponizing funding in the case of foreign aid. During the times that the Mexico City Policy has been active, the odds of having an abortion have increased in places like sub-Saharan Africa and Latin America, despite the policy's stated goals (van der Meulen Rogers 2018). The Mexico City Policy is also associated with higher international maternal and infant mortality rates in combination with HIV rates (Kavakli, Can, and Rotondi 2022). Such a policy has made it clear that the U.S. is not interested in the health and well-being of mothers or infants for minority women in America but also across the world.

Notably, author Dorothy Roberts, in her book *Killing the Black Body*, has pointed out that restricting abortion access through welfare funds (family caps and Reagan's 1988 "Gag rule") limits women's reproductive control and decisions. If you have no money to get an abortion or raise a child, what steps will you take as a poor black woman to avoid childbirth? Long-acting contraceptives and sterilization are cheaper, more effective methods that are indeed sponsored by government welfare programs. Avoiding childbirth is as dire as I am making it out to be. Black women still suffer more from birthing complications, like death, than white women do (United States 2021: 3). You may think that poor white women are subject to the same treatment, but black women with professional jobs and college educations still have birthing complications at higher rates than poor white women with minimal education (Davis 2019: 9). Racism during medical encounters is a frequent practice, even today (Davis 2019: 9), and it comes as no surprise given the extensive history of slavery, abortion, maternal mortality, and welfare in the United States.

Abortion and Maternal Mortality Today

From 2000 to 2008, the abortion rate declined by 8% for women aged 15–44, but the abortion rate for poor women grew by 17.5% and accounted for 42.4% of abortions in 2008 (Jones and Kavanaugh 2011). One reason for the concentration of abortions among poor women may be due to the Great Recession from 2005 through 2009. As further exemplified by the Great

Depression, times of uncertainty and reduced economic prosperity fall harder on marginalized groups, especially in terms of family planning. Contraceptives are harder to attain, and the morality of bringing a child into an unstable living situation contributes to abortion decision-making (Jones and Kavanaugh 2011). From 2000 to 2014, maternal mortality increased by 25.27% in the United States, from 18.2 maternal deaths per 100,000 live births to 22.8 maternal deaths per 100,000 live births (MacDorman, Declercq, Cabral, and Morton 2016). In Texas, maternal mortality from 2000 to 2010 (increased by 6.9%) and 2011 to 2014 (increased by 8.48%) varied so much that they were analyzed separately in the same study (MacDorman et al. 2016). The jump from 2010 to 2011 increased by 77.42%, a trend unseen by any other state. The U.S. was still recovering from the economic recession, but Texas was also responsible for the introduction of multiple laws enacting abortion restrictions. In 2005, they introduced the 24-week ban policy wherein women could not obtain legal abortions past 24 weeks of pregnancy and provided state funding to crisis pregnancy centers that counseled women against having an abortion (Reynolds 2021). In 2011, the Sonogram law required women to get a sonogram 24 hours prior to their abortion with an in-depth explanation of the image so as to convince women not to have an abortion. Additionally, Texas agencies were no longer allowed to use tax dollars to provide or promote abortions, meaning that Planned Parenthood was now excluded from state-sponsored health programs. By 2013, doctors performing abortions had to have admitting privileges at a hospital within 30 miles of the abortion facility, and all facilities must have met ambulatory surgical standards, no matter if the abortion facility only provided abortive pills (Reynolds 2021). Abortion after 20 weeks was banned unless women became at risk of death or had severe medical complications.

What happened in Texas between 2013 and 2014 was the start of TRAP Laws, otherwise known as Targeted Restrictions on Abortion Providers. As indicated by Texas's maternal mortality rates, TRAP laws are not designed to protect women's health but rather to promote a dangerous antiabortion rhetoric that ultimately affects marginalized women the most. The admitting privileges and building requirement laws introduced in 2013 in Texas caused a sharp decrease in abortion providers, with the number of women living more than 100 miles away from an abortion clinic tripling (Dixon 2022). By reducing abortion providers and increasing the distance of clinics, Texas effectively demonstrated that they could stop women from obtaining abortions in their state. Further, it has been established that modest increases in distance have substantial effects on abortion rates (Cunningham et al. 2017), a phenomenon that has been labeled as spatial inequality. Spatial inequality is defined as unequal access to abortion resources and care services based on location. However, Texas is not the only state to weaponize distance against women. From 2011 to 2013 in Wisconsin, a 100-mile increase in distance to the nearest clinic is associated with a 25% decrease in abortions, with significant racial disparities among black, Asian, and Hispanic women (Venator and Fletcher 2019). Spatial inequality has also been demonstrated to increase the odds of maternal death in countries such as Brazil, Zambia, Rwanda, Tanzania, and the Netherlands (Simões and Almeida 2014).

By 2013, more than half of the states in the U.S. instituted laws that included onerous and irrelevant licensing requirements (Gold and Nash 2013). The big push for many of these states, as claimed by Gold and Nash (2013), was the Philadelphia case of Kermit Gosnell. Gosnell was a Philadelphia physician found guilty of first-degree murder in the deaths of three infants and involuntary manslaughter in the death of one of his patients as the result of a botched abortion (Hurdle and Garbiel 2013). He was also convicted of 21 felony counts of illegal late-term abortions and 211 counts of violating Pennsylvania's 24-hour informed consent law (Hurdle and Gabriel 2013). Perhaps one of the greatest examples of a state government's inability to oversee its own state laws, the Gosnell case was quickly weaponized by anti-abortionists to increase regulations in order to eliminate abortion clinics (Gold and Nash 2013).

Despite this narrative, one case study focusing on the years 2009-2013 in the U.S. found that only one in five women experienced a complication that required hospitalization, and only 15 of the 27,941 women died of an abortion complication (Upadhyay, Johns, Barron, Cartwright, Tapé, Mierjeski, and McGregor 2018). However, women using Medicaid were twice as likely to suffer from a major incident, including death, than women not on Medicaid or on private health insurance (Upadhyay et al. 2018). Ultimately, the study claims that it is safer to have an abortion than it is to get your wisdom teeth removed (Upadhyay et al. 2018). In fact, reviewing data from 1998-2005 shows that women are 14 times more likely to die from live childbirth than from an induced abortion (Raymond and Grimes 2012). Upadhyay et al.'s 2018 research and Gold and Nash's 2013 policy summary altogether indicate that the anti-abortionist push for increased abortion restrictions on providers and clinics in the 2013 abortion landscape was about closing providers' doors, not about the safety of women. If it were about women's safety, there should be an indication of the ethics of care for women on Medicaid, which we know to be associated with living within marginalized communities.

Between 2014 and 2017, regional and state disparities among clinic availability grew more pronounced in that the number of clinics grew in the Northeast by 16% and the West by 4% while it decreased in the Midwest by 6% and the South by 9% (Jones, Witwer, and Jerman 2019: 3). The same study notes that "Although the number of state abortion restrictions continued to increase in the Midwest and South between 2014 and 2017, these restrictive policies do not appear to have been the primary driver of declining abortion rates (Jones et al. 2019: 1)." Notably, they recorded fluctuations in the Northeast and the West between closed and newly opened clinics. This means that though the number of available clinics did not primarily influence declining abortion rates, it's possible that the distance from available clinics did. More importantly, this study did not account for individuals crossing state lines for abortion care: "In the five states with the lowest [abortion] rates, 28% or more of individuals go out of state to obtain abortions (Jones et al. 2019: 7)." It might also be worth mentioning that by 2017, 18% of patients missed their appointment for the abortive procedure due to self-managed abortions with the highest reporting number at 25% located in the South (Jones et al. 2019: 8). Though correlations in this study insist that the number of restrictions are not the "primary driver of declining abortion rates," they may be partially to blame.

In 2017, 19 states adopted 63 restrictions affecting abortion rights and access, while 58% of American women of reproductive age lived in a state considered either hostile or extremely hostile to abortion rights (Nash et al. 2018: 2). Following the decreasing abortion rate, maternal mortality also decreased by 38% in 2017 since the year 2000 according to WHO (WHO, UNICEF, UNFPA, World Bank Group, and the United Nations Population Division 2019: 2). However, that rate would soon begin to climb in 2018 and has done so since according to the CDC (Hoyert 2021: 1). In fact, the maternal mortality rate has doubled since 2018 (Hoyert 2021: 1), with abortion rates reflecting an 8% increase from 2017 to 2020 (Jones and Philbin 2022: 1). Increases in abortion and increases in maternal mortality can be interpreted with Trump's 2019 "domestic gag rule" which slashed Title IX family planning capacity, reducing state access to low cost contraceptive care (Jones and Philbin 2022: 3). This may have resulted in unexpected pregnancies leading to the increase in induced abortions. Reducing state access to low-cost contraceptive care may have also targeted marginalized communities and increased the rate of maternal death due to lack of care (Aizenman 1988: 1). Importantly, it is necessary to understand that 200,000 maternal deaths across the world are avoidable each year with proper contraception (Aizenman 1988: 1). Noted indirect causes of maternal mortality are related to poverty, illiteracy, and lack of access to health care (Aizenman 1988: 1). During a time when the country was seeing increases in abortion and increases in maternal mortality in combination with increasing abortion restrictions, the U.S. Supreme court was poised to overturn Roe v. Wade (1977).

By June 6th, 2022, 13 states–including Arkansas, Idaho, Kentucky, Louisiana, Mississippi, Missouri, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Utah, and Wyoming (Guarnieri 2022: 1)–had laws in place to take effect immediately following the overturn of Roe v. Wade (1977) in the Dobbs v. Jackson Women's Health (2022) decision. Such laws were labeled as "trigger laws," wherein they were "triggered" or enacted the moment Roe v. Wade (1977) became inapplicable to state laws on abortion. When they inevitably went into effect, this forced patients to seek care outside of trigger states. Despite the bans, abortion rates have skyrocketed, and states without total bans have experienced 25% increases in provided abortions from 2020-2023 (Maddow-Zimmet and Gibson 2024: 3). The development of "shield laws" also began wherein states created increased protections for patients in the post-Dobbs world of care exist in 22 states as of 2023–including Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Massachusetts, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington (Forouzan and Guarnieri 2023: 7). But, "shield laws" in some states cannot provide protection for all fifty states. In 2022, one study drew on CDC Wonder data in order to determine how abortion restrictions would affect future maternal and infant health (Declercq, Barnard-Mayers, Zephyrin, and Johnson 2022). They noted that "Compared to states where abortion is accessible, states that have banned, are planning to ban, or have otherwise restricted abortion have fewer maternity care providers; more maternity care 'deserts'; higher rates of maternal mortality and infant death, especially among women of color; higher overall death rates for women of reproductive age; and greater racial inequities across their health care

systems (Declercq et al. 2022: 1).” It would appear that abortion restrictions *did*, in fact, make precarious situations more precarious.

CHAPTER II: RESEARCH QUESTION

I have explained the historical context of reproductive healthcare in the United States and its relation to abortion policies and maternal mortality. Additionally, I have elaborated on why abortion restrictions are national issues despite being left to discern by state governments and their policies. In the next section, I will describe how I will conduct the remaining study portions, reflect on the conceptual framework, and expand on this study's research problem.

Key Points from the Literature Review

The literature review shows that states that have increased abortion restrictions have higher maternal mortality rates compared to states that have protections or are considered neutral to abortion (Addante et al. 2021). This research seeks to repeat their findings in a more recent period while utilizing necropolitics as a lens for understanding how state laws have become weapons of reproductive injustice and death through comparing secondary datasets. State trigger laws had intentions to decrease abortion rates by shutting down clinics or repealing active pro-choice legislation, which limited access to safe abortions (Jones, Lindberg, and Witwer 2020) and increased spatial inequality (Venator and Fletcher 2019). If no abortions were to happen across all fifty states, the overall maternal mortality rate would increase by 24%, with a tremendous increase among non-Hispanic blacks by 39% (Stevenson et al. 2022).

Poverty intersects with obstacles women face with access to safe abortions, resulting in increased self-managed abortions, many of which are unsuccessful and require medical follow-up (Fuentes, Baum, Keefe-Oates, White, Hopkins, Potter, and Grossman 2020). By 2019, countries that had more flexible abortion restrictions saw their maternal mortality rates decrease, though only by 45 per 100,000 live births (Latt, Milner, and Kavanaugh 2019). Therefore, the literature implies the need to retest the following hypothesis with updated yearly data: states with more restrictive policies will have higher maternal mortality rates.

Conceptual Framework

The proposed study examines the extent to which restrictive abortion policies can explain maternal mortality rates. The primary independent variable is the extent to which a policy is restrictive or supportive in a state. The hostility rating scale provided by the Guttmacher Institute evaluates states from 2009 to 2019 based on the number and types of policies that hinder abortion access and abortion care. A higher number of these restrictive policies indicates a greater level of hostility toward abortion in a state, with more policies reflecting a more restrictive environment. The dependent variables are the maternal mortality rates for Hispanic and any race; non-Hispanic American Indian and Alaska Native; non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander; non-Hispanic Black; and non-Hispanic White women, which represent the rate of maternal deaths in a state compared to the number of live births. In other words, examining maternal mortality rates separately by race serves to examine whether

the strength of the relationship between a given state's restrictive abortion policies and their maternal mortality rates varies by racial and ethnic groups.

In addition, given the pervasive nature of structural racism and its relevance to maternal outcomes (Addante et al. 2021: 500), examining maternal mortality specific to each of those five racial-ethnic groups will permit further contextualizing the relationship between restrictive abortion policies and maternal mortality rates. For example, Latina women are most affected by distance to obstetrical clinics (Cunningham, Lindo, Myers, Schlosser, National Bureau of Economic Research 2017: 18) and account for more than half of self-managed abortions (Fuentes, Baum, Keefe-Oates, White, Hopkins, Potter, and Grossman 2020: 5), while black women have maternal mortality rates three times higher than Latina or white women (Hawkens et al. 2020: 172) and tend to experience the greatest increase in maternal deaths overall compared to white and Hispanic women (Stevenson, Root, and Menken 2022: 6).

Although this study does not empirically examine intervening variables through which restrictive abortion policies are thought to worsen maternal mortality rates, understanding such mechanisms is important to being able to understand the larger context of the statistical models examined here. These mechanisms include differences in abortion services and obstetric services regarding Medicaid/insurance coverage, provider availability, clinic availability/closures, spatial distance to care, and induced abortion rates. Restrictive abortion policies notably affect insurance coverage (Nash et al. 2018: 5), which greatly affects provider availability and obtaining hospital admitting privileges (Fuentes et al. 2020: 2). In this case, restrictive abortion policies limit providers from doing their jobs, and it forces them to close their clinics. If there is no provider, there is no clinic, and reducing the proportion of Planned Parenthood clinics by 20% has been shown to increase maternal mortality by 8% (Hawkins et al. 2020: 167). Closing clinics means that women have to travel further to receive abortion care (Cunningham et al. 2017: 5). This is known as spatial inequality, which represents unequal access to abortion resources and care services based on location. It is well understood that the odds of maternal death are increased with increased distance from the hospital (Simões and Almeida 2014: 1506). Additionally, if abortion clinics had remained open before the institution of the Texas House Bill 2 Law, 12,000 more abortions may have been reported from 2014–2015, which influences the overall induced abortion rate across the U.S. (Cunningham et al. 2017: 22). The complete maternal mortality rate for the U.S. increases by 24%, with an incredible increase among black women at 39% when there is no induced abortion rate (Stevenson et al. 2022: 3).

All fifty states by year for 2009-2019 will operate as the population (50 states X 11 years = 550 = n)[1]. Given I am attempting to explain maternal mortality rates dependent on whether or not states have restrictive abortion policies, I will have to focus on rates per state. Examining 2009 through 2019 covers a period when a substantial proportion of the states imposed increasingly restrictive abortion policies. As explained in the literature review and repeated within the key points, it is essential to recognize that relationships among variables change over time and during critical periods of political change, such as the introduction of pre-abortion

[1] This study will not address the District of Columbia or U.S. territories due to limited data.

counseling and TRAP laws. Therefore, the unit of analysis is the state-year. All states during this time period were still held accountable to the standards in Roe v. Wade (1974) despite many states' challenges to the ruling – specifically, new or recurrent legislation that follows the description of Guttmacher's main abortion restrictions (Nash et al. 2018).

There is one hypothesis to test for each of the racial-ethnic-specific dependent variables: the more restrictive a state's policies toward abortion, the higher will be those states' racial- and ethnic-specific maternal mortality rates. I expect results to support this hypothesis throughout the 2009-2019 time period. The results will illuminate baseline conditions in effect just before Roe v. Wade (1973) overturned in Dobbs v. Jackson Women's Health (2022).

Expanded Statement of the Research Problem

The purpose of this research is to quantitatively determine the relationship between state abortion restrictions and maternal mortality rates, which I will interpret from a feminist perspective. In other words, do restrictive abortion policies affect state maternal mortality rates during the time period 2009 to 2019? I have defined maternal mortality rates as the dependent variable, with the independent variable being restrictive abortion policies. Though previous research concludes there is an existing relationship between abortion restrictions and maternal mortality (Addante et al. 2021), there has yet to be a study focusing on the years 2009 to 2019, with replicated findings that reflect the increasingly hostile laws aimed at limiting women's bodily autonomy and family decision-making. The period also includes rates just prior to Dobbs v. Jackson Women's Health (2022), therefore making this study foundational for future comparisons in similar studies that will have post-Dobbs data available. This study will also break down the dependent variable, state maternal mortality rates, by race and ethnicity based on two secondary datasets: the state maternal mortality rates separated by race and ethnicity provided by the Institute for Health Metrics and Evaluation and the restrictive abortion policies by state rated according to the scale provided by the Guttmacher Institute (Nash et al. 2018). In short, using panel data or a cross-sectional time-series (CSTS) analysis, this study will examine the relationship between maternal mortality rates and levels of abortion restrictions, including racial-ethnic differences in those mortality rates.

CHAPTER III: METHODS

Independent Variable: State Abortion Restrictions Classification

The Guttmacher Institute is a well-respected research and policy organization that yearly collects data from abortion providers across the United States through surveys. They are a leading research and policy organization dedicated to advancing sexual and reproductive health and rights worldwide and provide a multitude of resources and advocation regarding abortion policies and restrictions. Policy data provided by the Guttmacher Institute counts the number of abortion-hostile practices a state has, which constitutes the primary independent variable for this study (Nash et al. 2018). States were classified annually from 2008 to 2018, excluding the year 2009, by Guttmacher Institute policy analysts to create a restriction scale.

The restriction scale is a point-based system assessing states categorized by the ten major types of abortion restrictions:

1. requiring parental involvement before a minor's abortion;
2. mandating medically inaccurate or misleading pre-abortion counseling;
3. requiring a waiting period after abortion counseling at a clinic, thus necessitating two trips to the facility;
4. mandating a non–medically indicated ultrasound before an abortion;
5. banning Medicaid funding of abortion except in cases of life endangerment, rape or incest;
6. restricting abortion coverage in private health plans;
7. imposing medically inappropriate restrictions on medication abortion;
8. requiring onerous and unnecessary regulations on abortion facilities;
9. imposing an unconstitutional ban on abortion before viability or limits on abortion after viability; and
10. enacting a preemptive ban on abortion if Roe v. Wade is overturned.

For each state-year combination, this study's state abortion restrictions scale equals the number of these ten restrictions.

For the year 2009, I calculated the difference in the two year change by subtracting the 2008 value from the 2010 value. I divided this difference by two to get the approximate change per year and then added the yearly change to the 2008 value to estimate the 2009 score. The formula for each state's 2009 score is:

$$Score_{2009} = Score_{2008} + \frac{(Score_{2010} - Score_{2008})}{2}$$

In 2019, Guttmacher changed methods for constructing this hostility rating scale by re-rating states for the years 2000, 2010, and 2017 while including a new rating for the year 2019. The states were rated on fulfilling new specific qualities of the 5 categories: extremely hostile (score = -6), hostile (score = -3 to -5), middle ground (score = -2 to +2), supportive (score

= +3 to +5), and extremely supportive (score = +6). To standardize measures of abortion restrictions across years, I converted the 2019 Guttmacher scale (-6 to +6) into the earlier count-based scale (0–10). This was achieved using overlapping data from 2010 and 2017, where both scales were available (see Appendix A). The following mapping was derived empirically:

Table 1. Abortion restriction mapping, 2019 vs. 2008-2018

2019 Guttmacher Scale	2008-2018 Guttmacher Scale
-6	8 to 10
-5	6 to 7
-4	4 to 6
-3	3 to 5
-2 to -1	2 to 3
0	1 to 2
+1 to +3	0 to 2
+4 to +6	0

This mapping was based on direct comparisons between the old and new scales and aligns with Guttmacher's qualitative descriptions. Some overlaps were observed, particularly within the "hostile" and "middle ground" categories. For example, the boundaries between scores of -3 and -4 on the new scale overlapped with old scale scores of 3–5 and 4–6, respectively. Similarly, scores of -2 and -1 corresponded to overlapping ranges of 2–3 on the old scale, while scores of 0 sometimes aligned with both 1 and 2. These overlaps[2] were addressed by referencing state-specific policy characteristics where possible and prioritizing consistency across years. Though I recognize this is not a perfect adjustment for the change in methods, the conversion preserves the conceptual integrity of the original measure for the linear regression analysis[3].

Dependent Variables: The Maternal Mortality Ratio

Located at the University of Washington, the Institute for Health Metrics and Evaluation (IHME) is an independent global health research center that provides a uniquely constructed data catalog known as the Global Health Data Exchange (GHDx). The GHDx provides this study's data set on maternal mortality across five racial and ethnic groups within the United States.

[2] Utilizing Guttmacher's State Legislation Tracker (2021), I was able to see the direct change in policies for all 50 U.S. states from 2015 to 2019 and cross-reference those changes with the hostility ratings from 2015 to 2019.
[3] An additional CSTS panel regression was conducted for the years 2009-2018, wherein a relationship between increasing maternal mortality and increasing hostility towards abortion was significantly correlated at $p < 0.001$.

Previous research has utilized accessible datasets provided by IHME (Addante et al. 2021), an organization based on ethically conducted research and policy at the forefront of health and demographic research.

The maternal mortality ratio (MMR) is defined as the number of maternal deaths per one hundred thousand live births (Wendland 2022: 193). The GHDx dataset includes MMR estimates for Hispanic and any race; non-Hispanic American Indian and Alaska Native; non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander; non-Hispanic Black; and non-Hispanic White females ages 10-54 for each year from 1999 through 2019. National, census, group, and state estimates for each racial and ethnic group are included in the data set.

This study's focus is on the second period of the IHME data set, from 2009 to 2019. During the later portion of this ten-year period, the number of abortion restrictions increased across the United States with the introduction of pre-abortion counseling and TRAP laws (Gold and Nash 2013; Gold and Nash 2015). I will use six MMRs as my dependent variables: five for the racial and ethnic groups previously listed and one overall MMR for all racial and ethnic groups combined.

CHAPTER IV: DATA ANALYSIS

This research represents a quantitative analysis for the panel data described above, specifically using cross-sectional time-series (CSTS) negative binomial panel regression analysis with fixed effects (Al Amin 2022). Generally, panel data contains observations about different cross-sections over time, collected at a regular frequency, chronologically, across a collection of individuals. An important advantage of panel data relevant to this thesis is that the analysis allows the research to control for individual heterogeneity: Variables that change over time but not across entities can be controlled for, such as state policies (Al Amin 2022).

The statistics program Stata was used to conduct CSTS analysis. The first step of this analysis was declaring the dataset as panel data so Stata could account for time-series and cross-sectional characteristics:

```
xtset location_id year_id
```

Declaring the panel structure allows Stata to recognize the data as grouped by entity (e.g., state) and observed over time (e.g., by year). This ensures that Stata applies time-series adjustments appropriately.

To address skewness in the distribution of certain variables and to stabilize variance across observations, a log transformation was applied to the data. This transformation helps meet regression assumptions, reducing heteroskedasticity and improving the fit of the model. Additionally, the log-transformed variables allow for coefficients to be interpreted as elasticities, meaning the estimated effects represent percentage changes in the outcome variable, aligning with the study's focus on relative changes rather than absolute values:

```
gen ln_mmrh1 = ln(mmrh1)
gen ln_mmraian2 = ln(mmraian2)
gen ln_mmranhopi3 = ln(mmranhopi3)
gen ln_mmrb4 = ln(mmrb4)
gen ln_mmrw5 = ln(mmrw5)
gen ln_mmro6 = ln(mmro6)
```

In order to log transform the hostility ratings, I needed to add a value high enough so that the minimum value was over zero:

```
gen ln_hostility_rating = ln(hostility_rating + 1)
```

I used a fixed-effects model to control for unobserved heterogeneity across entities (e.g., unique characteristics of each state) that might bias results if left unaccounted for. This analysis also included robust standard errors to correct for potential heteroskedasticity and autocorrelation in panel data:

```
xtreg ln_mmrh1 ln_hostility_rating, fe robust
xtreg ln_mmraian2 ln_hostility_rating, fe robust
xtreg ln_mmranhopi3 ln_hostility_rating, fe robust
xtreg ln_mmrb4 ln_hostility_rating, fe robust
xtreg ln_mmrw5 ln_hostility_rating, fe robust
xtreg ln_mmro6 ln_hostility_rating, fe robust
```

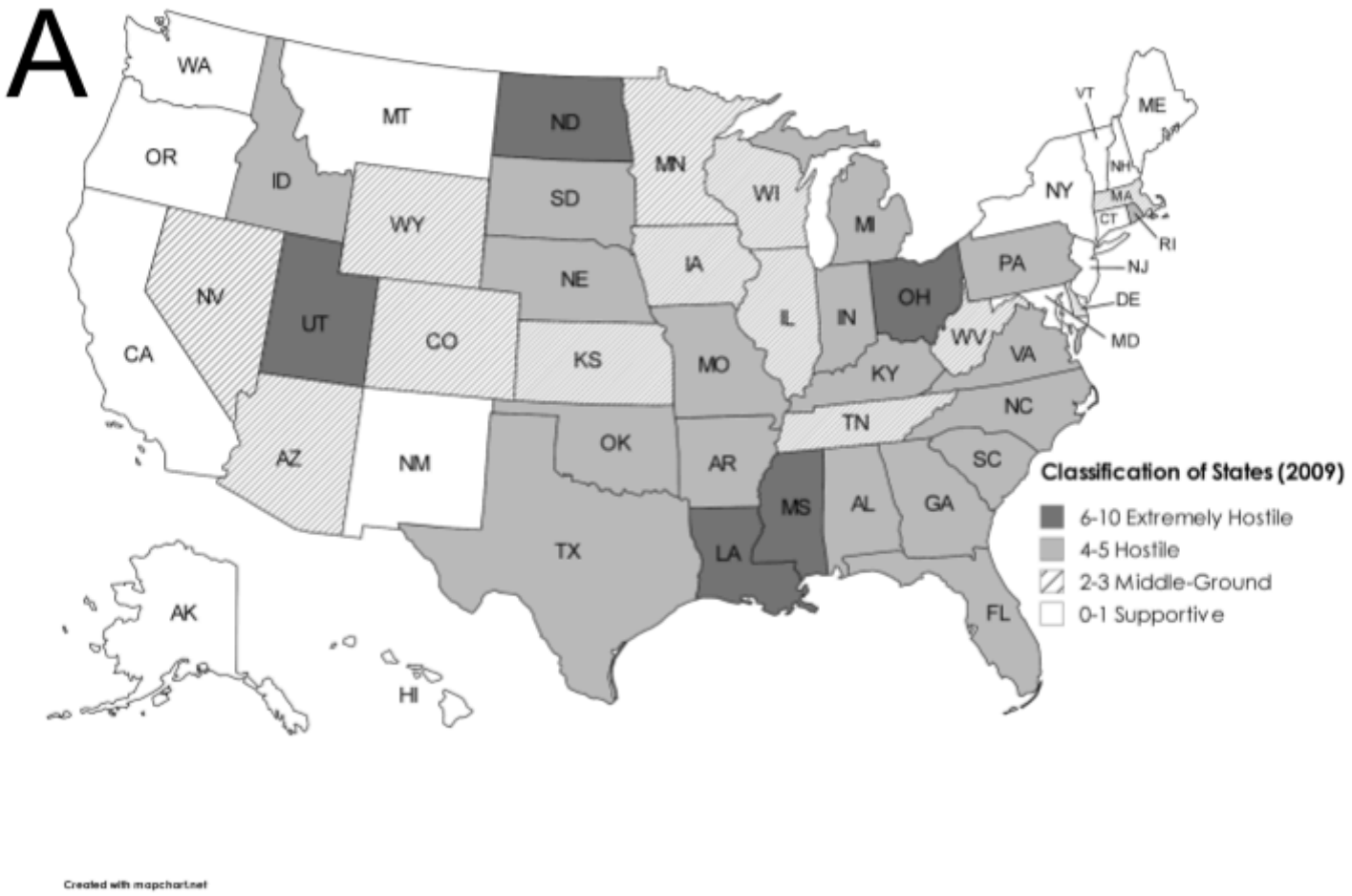
A fixed effects model enables me to isolate the within-entity (e.g., state) variation over time, which is crucial for the analysis. In addition, robust standard errors help improve the reliability of the coefficient estimates, particularly in datasets where heteroskedasticity or serial correlation might otherwise distort the results.

A two-tailed p-value of less than 0.05 was considered statistically significant. Because the data were publicly available and de-identified, they are exempt from review by the Institutional Review Board for Virginia Polytechnic Institute and State University.

Classification of States

Abortion restrictions may be summarized by state by collapsing the Guttmacher scale into four categories: A state is considered supportive if it scores a 1, middle ground if it scores a 2-3, hostile if it scores a 4-5, and extremely hostile if it scores a 6-10. In 2009, 14 states (28%) were supportive, 13 states (26%) were middle-ground, 18 states (36%) were hostile, and five states (10%) were extremely hostile (Figure 1A). By 2019, 14 states (28%) were supportive, eight states (16%) were middle-ground, five states (20%) were hostile, and 23 states (46%) were extremely hostile (Figure 1B). From 2009 to 2019, 26 states (52%) increased their hostility ratings by instituting additional abortion restrictions, with the most dramatic increases occurring in Arizona (increasing from 2 to 8 on the full 10-point scale), Kansas (increasing from 2 to 8), and West Virginia (increasing from 2 to 6). Of the 18 states that were already considered hostile in 2009, 13 of them (72%) became extremely hostile by 2019. These states include Alabama, Arkansas, Florida, Indiana, Kentucky, Missouri, North Carolina, Oklahoma, South Carolina, South Dakota, Texas, and Virginia. Illinois was the only state to move from middle-ground to protective, while New Hampshire was the only state to move from supportive to middle-ground in the 2009-2019 time period. Interestingly, Delaware was the only state to move from hostile in 2009 to middle-ground in 2019.

Figure 1.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Classification of States (2009)
6-10 Extremely Hostile
4-5 Hostile
2-3 Middle-Ground
0-1 Supportive
Created with mapchart.net

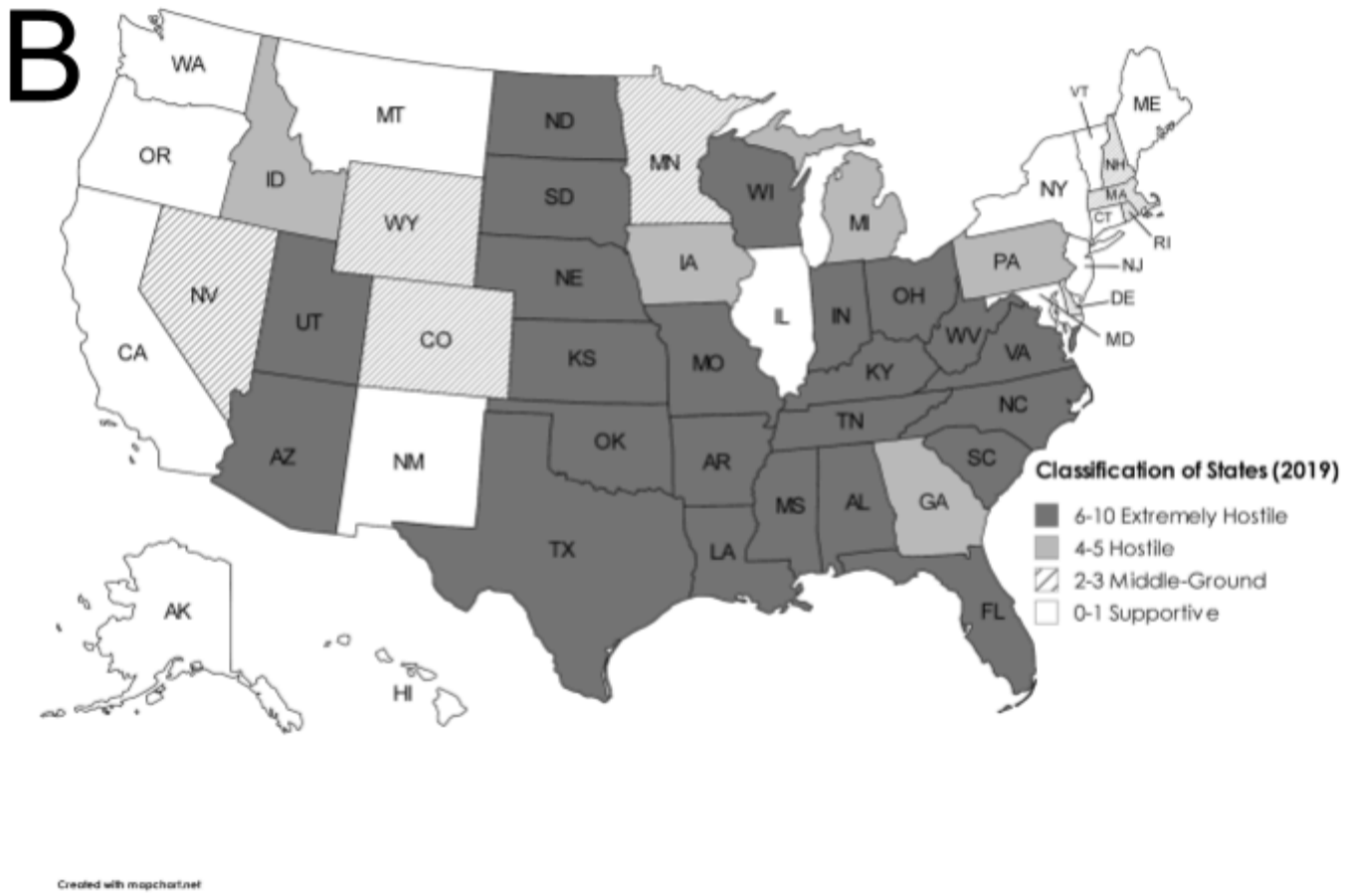

Figure 1. Classification of hostility based on the number of abortion restrictions for individual states in 2009 and 2019 based on policy information from the Guttmacher Institute

1A – Classification of states in 2009

1B – Classification of states in 2019

Dark Grey = extremely hostile states, Light Grey = hostile states, Striped Grey = middle-ground states, White = supportive states

These maps are generated using mapchart.net mapping tools, based on the Guttmacher data used in my analysis.

Below, I included descriptive statistics for maternal mortality across the 2009-2019 time period to better understand the overall trend in the dependent variable (Table 2). I also show the raw means for each racial and ethnic group from the GHDx data for 2009 and for 2019 (Figure 2). And finally, in Table 3 I show the overall rate of MMRs in each state per year is a representation of the mean calculations of all racial and ethnic group MMRs from GHDx combined.

Table 2. Descriptive statistics for maternal mortality rate by racial and ethnic group, annually 2009-2019, n= 50 US states

Variable	*Mean*	*SD*	*Min*	*Max*
Dependent variable				
maternal mortality ratios				
Overall	32.125	12.885	11.098	83.039
Hispanic and any race	18.037	8.506	1.758	43.954
non-Hispanic American Indian and Alaskan Native	45.732	42.997	1.367	300.847
non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander	20.308	15.278	0.477	98.024
non-Hispanic Black	50.531	25.689	3.067	141.075
non-Hispanic White	26.018	10.091	5.984	72.671

Mean Maternal Mortality Estimates 2009-2019

Reviewing patterns in the raw data provided by the GHDx, maternal mortality rates across racial and ethnic groups increased overall from 2009 to 2019 by 53% (Figure 2). Though estimates were highest for non-Hispanic black women in 2009, by 2019, the estimates for non-Hispanic American Indian and Alaskan Native women were highest. In fact, the increase for maternal mortality rates for non-Hispanic American Indian and Alaskan Native women from 2009 to 2019 was 97%, the overall highest percent increase compared to the other racial and ethnic groups. For non-Hispanic Black women, it was 36%, which was the fourth highest increase compared to the maternal mortality rates of GHDx's other racial and ethnic groups. The second highest maternal mortality rates were for non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander at 48%, while the third highest were for non-Hispanic White women at 41%. The final highest maternal mortality rates were for Hispanic and any race women at 23%.

Figure 2: Mean maternal mortality rates by racial and ethnic groups for 2009 and 2019, displays a summary of national maternal mortality rates by race and ethnicity for the years 2009 and 2019. Alone, this graph allows us to question what external influences could be affecting the raw numbers. For example, Hispanic & any race women, non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women, and non-Hispanic White women start within 15-20 maternal deaths per 100,000 live births in 2009 but end at very different rates by 2019. What happened in 2009 that isn't happening in 2019? Or the other way around, what didn't happen in 2009 that happened in 2019? The negative binomial regression analysis in Table 3 should help explain part of this relationship.

Figure 2.

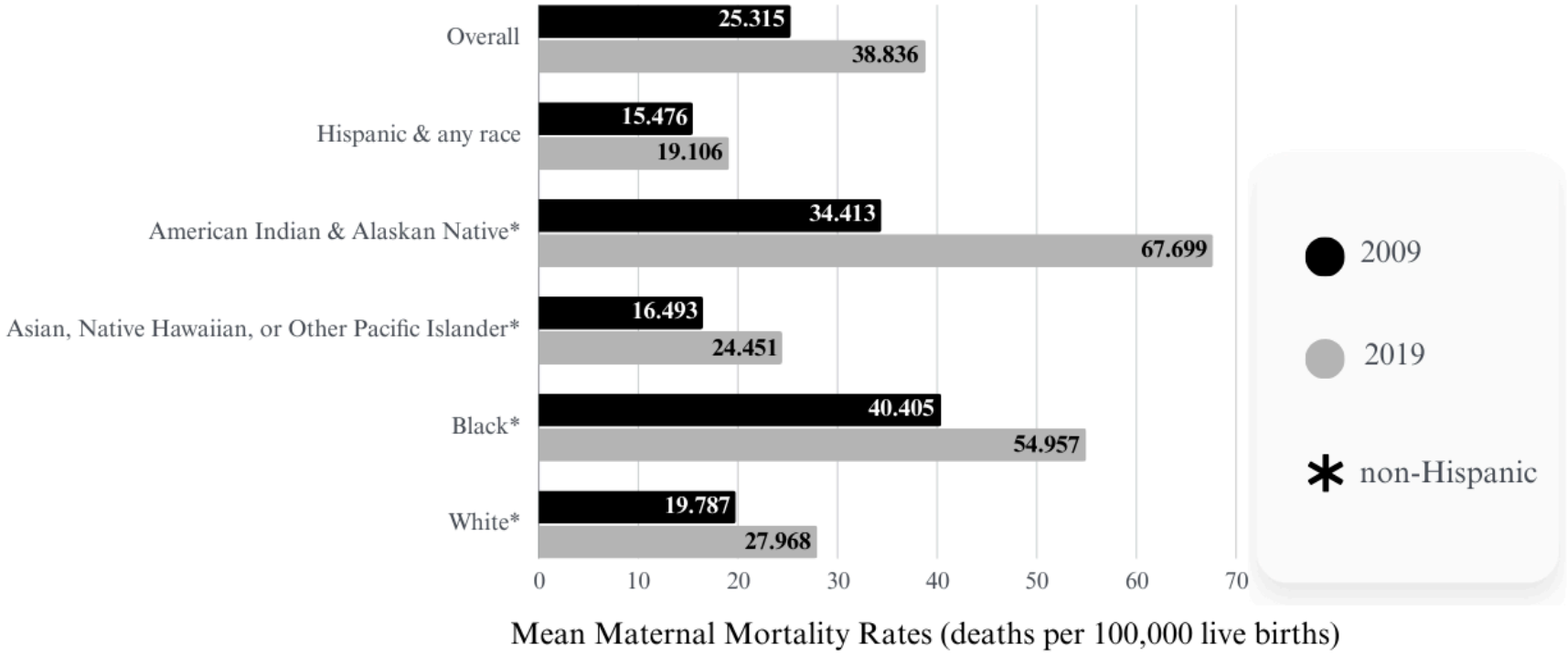

Figure 2. Mean maternal mortality rates (deaths per 100,000 live births) by racial and ethnic groups for 2009 (black) and 2019 (grey) based on maternal mortality estimates by state from the Global Health Data Exchange through IHME.

Regression Analysis: Relationship Between MMR and State Hostility Towards Abortion

Figure 3: Racial disparities by state abortion restrictions shows the annual means over the period 2009 to 2019. This means that the data are displaying mean slopes of MMRs of race/ethnicity per abortion restriction increase. This method does not necessarily represent the overall trend in the data given the variation in MMR by abortion restriction. For example, Hispanic & any race women in Figure 2 have the lowest increase in MMR by 23% and also have the lowest MMR per abortion restriction increase in Figure 3 and in Table 3. However, the second highest increase in MMR in Figure 2 was non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women at 48%. But in Figure 3, they are the second lowest MMR per abortion restriction increase. At the same time, non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women have the second highest percent increase in MMR per 1% increase in state hostility in Table 3. This discrepancy among Figure 2, Figure 3, and Table 3 for non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women is because we are assessing different conditions of overall MMR, overall MMR vs. abortion restrictions, and state-by-state MMR vs. state-by-state abortion hostility. A regression analysis, as displayed in Table 3, represents the slope of the line that best fits the data points, minimizing the squared errors between the line and the data. It also allows the description of the linear relationship between MMR and state hostility towards abortion. Meaning, MMR (the dependent variable) changes with a unit change in the state hostility towards abortion (the independent variable). Because it is a negative binomial regression, all of the data are log-transformed which allows us to interpret the beta coefficient as when state hostility (the predictor), increases 1% over time, the MMR (the dependent) changes beta coefficient percent (elasticity).

For Hispanic and any race women in Table 3, a 1% increase in a state's hostility score is associated with a 0.40% increase in MMR (95% CI 0.11-0.69). As for non-Hispanic American Indian and Alaskan Native women, a 1% increase in a state's hostility score towards abortion is associated with an approximate 0.29% increase in MMR, holding other factors constant from 2009 to 2019 (95% CI 0.02-0.56). Similar results hold true for non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women, as a 1% increase in a state's hostility score towards abortion is associated with an approximate 0.53% increase in MMR, holding other factors constant from 2009 to 2019 (95% CI 0.20-0.86). For non-Hispanic Black women, a 1% increase in a state's hostility score towards abortion is associated with an approximate 0.39% increase in MMR, holding other factors constant from 2009 to 2019 (95% CI 0.17-0.61). And finally, non-Hispanic White women were seen to have a 1% increase in a state's hostility score towards abortion is associated with an approximate 0.54% increase in MMR, holding other factors constant from 2009 to 2019 (95% CI 0.25-0.83). Understandably, each relationship between maternal mortality ratios and hostility ratings were significantly correlated, meaning that overall maternal mortality rates for women ages 10-44 increase as restrictions increase.

Figure 3.

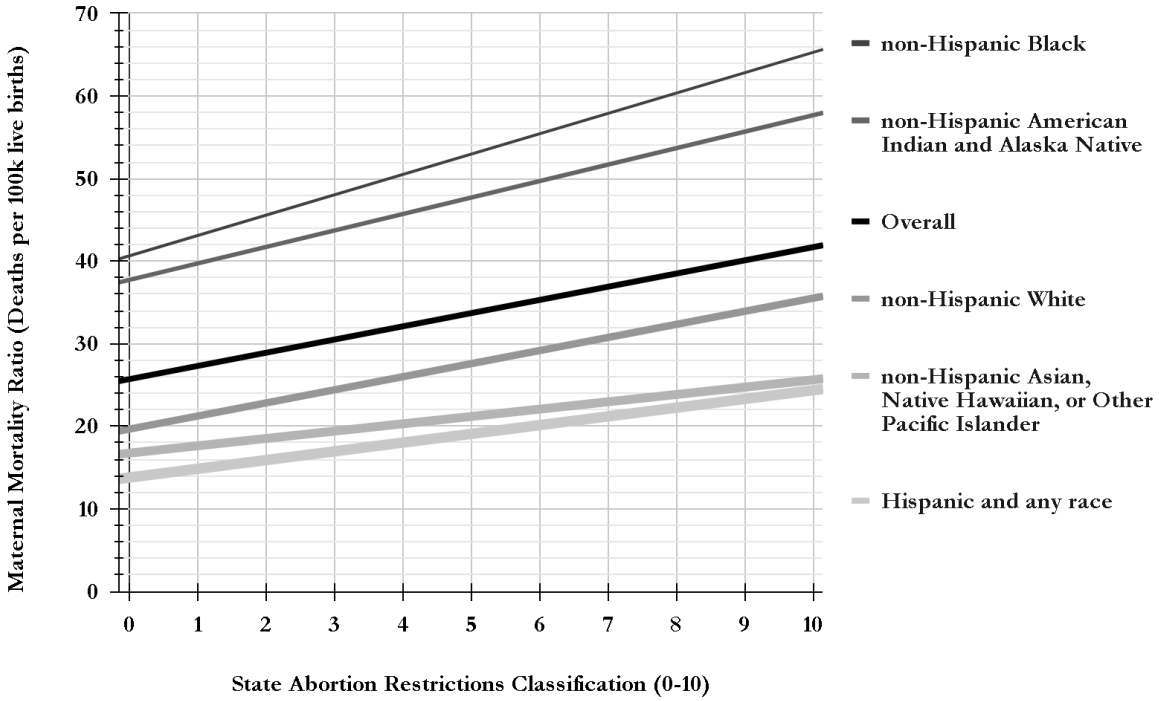

Figure 3. Racial disparities (annual means over the period 2009 to 2019) by state abortion restrictions

Dark Grey, 2pt line: non-Hispanic Black
Medium Grey, 3pt line: non-Hispanic American Indian and Alaska Native
Black, 4pt line: overall rate
Grey, 5pt line: non-Hispanic White
Light Grey, 6pt line: non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander
Silver Grey, 7pt line: Hispanic and any race

Table 3. CSTS panel regression models for maternal mortality ratios, annually 2009-2019, n= 50 US states

Dependent Variable: Maternal Mortality Ratios

Independent Variables	*Overall*	*Hispanic and any race*	*non-Hispanic American Indian and Alaskan Native*	*non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander*	*non-Hispanic Black*	*non-Hispanic White*
Hostility rating	0.448 ***	0.399 ***	0.294 **	0.529 ***	0.392 ***	0.537 ***
	(0.094)	(0.143)	(0.134)	(0.164)	(0.108)	(0.144)
Constant	2.771 ***	2.192 ***	2.927 ***	1.944 ***	3.207 ***	2.445 ***
	(0.129)	(0.197)	(0.185)	(0.226)	(0.149)	(0.198)
Observations	550	550	550	550	550	550
R^2	0.1374	0.0653	0.0565	0.0182	0.1157	0.1241
State FE	YES	YES	YES	YES	YES	YES
Number of states	50					

Unstandardized regression coefficients with robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

CHAPTER V: DISCUSSION

This section examines the association between restrictive abortion policies and maternal mortality rates across U.S. states from 2009 to 2019. The descriptive findings show a significant trend toward increasing hostility toward abortion, with nearly half of the states rated as extremely hostile by 2019, compared to only 10% in 2009. States like Arizona and West Virginia experienced notable increases in hostility scores, reflecting a broader ideological shift in conservative policy making aimed at limiting abortion access. Maternal mortality rates rose markedly during this period, with especially high increases among non-Hispanic American Indian and Alaskan Native women, underscoring how race intersects with reproductive health access and outcomes.

The hypothesis-testing analysis confirms a statistically significant relationship between rising state hostility toward abortion and increasing maternal mortality rates. For each 1% increase in hostility, maternal mortality rises by 0.45% overall, with non-Hispanic White women showing a 0.54% increase, non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women a 0.53% increase, and non-Hispanic Black women a 0.39% increase. These findings align with the concept of necropolitics, illustrating how restrictive policies disproportionately impact marginalized racial and ethnic groups, particularly in states with fewer reproductive health resources.

Trends in State Hostility Towards Abortion

The classification of states from 2009 to 2019 reveals a significant shift towards increased hostility towards abortion. By 2019, nearly half of the states (46%) were classified as extremely hostile, compared to just 10% in 2009. This escalation in restrictive abortion policies, particularly in states like Arizona, Kansas, and West Virginia, underscores a growing trend of conservative legislative actions aimed at limiting abortion access. The persistence and intensification of the abortion restrictions highlighted in this research reflect broader political and ideological shifts that prioritize conservative views on reproductive rights, much like previous research suggests (Jones, Lindberg, and Witwer 2020; Jones and Philbin 2022: 3). It's interesting that Arizona, which went from a rating of 2 in 2009 to 8 in 2019, and West Virginia, which went from a rating of 2 in 2009 to 6 in 2019, were among the first 15 U.S. States to close within the first 100 days post-Roe (Dreweke, Joerg, and Jones 2022). By October 2nd, 2022, the remaining 12 included Alabama, Arkansas, Georgia, Idaho, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, South Dakota, Tennessee, Texas, and Wisconsin (Dreweke, Joerg, and Jones 2022). Notably, each state that closed clinics by October of 2022, was considered hostile by 2019 towards abortion given their increased restrictions (Figure 1).

MMRs and Racial Disparities

The observed increase in maternal mortality rates across all racial and ethnic groups from 2009 to 2019 is alarming. Notably, non-Hispanic American Indian and Alaskan Native women

experienced the most significant rise, with a 96.72% increase in maternal mortality rates (Figure 2). This stark contrast to other groups highlights the unique vulnerabilities and systemic inequities faced by this population.

Figure 3 further illustrates these disparities by visually demonstrating how maternal mortality ratios increase as state abortion restrictions intensify, with trends varying across racial and ethnic groups. Non-Hispanic Black women experience the steepest increase, reflecting the largest compounded impact of restrictive policies. While all groups are affected, the significant disparities between racial and ethnic groups underscore the intersection of race and reproductive health.

For example, non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women, as well as Hispanic women, exhibit gentler increases in MMR compared to non-Hispanic Black and American Indian/Alaska Native women. However, these trends still indicate a troubling rise, especially in states with higher hostility towards abortion. The overall trend line (black line) conceals these sharper disparities, demonstrating how aggregate data can mask the more pronounced risks faced by marginalized groups.

These findings align with previous reproductive health analyses (Addante et al. 2021: 500; Hawkens et al. 2020: 172; Stevenson, Root, and Menken 2022: 6) while reinforcing the importance of addressing racial inequities in healthcare access, systemic racism, and restrictive abortion policies that disproportionately impact communities of color.

Relationship Between MMRs and State Hostility Towards Abortion

The analysis reveals a significant association between increased state hostility toward abortion and higher overall maternal mortality rates, with a 0.45% increase in maternal mortality for every 1% rise in state hostility (Table 3). This finding aligns with the hypothesis that restrictive abortion policies contribute to adverse maternal health outcomes, supporting the concept of necropolitics, where state power determines access to life-saving healthcare (Suh 2021).

Further analysis reveals that a 1% increase in a state's hostility score correlates with a 0.54% rise in maternal mortality rates for non-Hispanic White women, a higher increase than observed in other racial and ethnic groups. This could be due to spatial inequality (Center for Medicare and Medicaid Services 2019; Ostmo & Rosencrans 2022), healthcare gaps in restrictive states (Center for Medicare and Medicaid Services 2019; Ostmo & Rosencrans 2022), and disruption of established access (Hassanein 2022; Kozhimannil, Interrante, Henning-Smith, & Admon 2022). This finding is followed by non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women with a 0.53% increase and non-Hispanic Black women at 0.39% increase for every 1% increase in a state’s hostility score towards abortion. These results are consistent with prior research, which highlights how restrictive abortion policies disproportionately impact marginalized communities, increasing maternal mortality rates for racialized groups (Addante et al. 2021: 499; Hawkins et al. 2020: 167).

The data underscore how restrictive abortion policies create conditions of reproductive violence that increase reproductive control for everyone nationally. The compounding effect of increased abortion restrictions makes it so that non-Hispanic White women's conditions are becoming more similar to non-Hispanic Black women's conditions. The data also show that this specific pattern is not unique to non-Hispanic White women- we see the same phenomena occurring with non-Hispanic Asian, Native Hawaiian, or Other Pacific Islander women. These results indicate that women's lives regardless of race-ethnicity are becoming precarious when women's healthcare measures including abortion services are restricted or banned. Thus, the disparities in maternal mortality illustrate necropolitical outcomes, where the United States not only values the lives of white women over black women, but it also values the lives of men over women. In states like Arizona and West Virginia, the longer travel distances and fewer healthcare resources (Dreweke, Joerg, and Jones 2022) will further affect marginalized groups by separating them from essential services (Center for Medicare and Medicaid Services 2019; Hassanein 2022; Kozhimannil et al. 2022; Ostmo & Rosencrans 2022). This enforced separation from critical health services reflects policies that prioritize some lives over others, embodying necropolitical control as described by Mbembe and Meintjes (2003).

Implications for Policy and Practice

The findings of this study have significant implications for reproductive health policies, particularly in light of rising maternal mortality rates. The continued and growing hostility toward abortion policies poses a direct threat to maternal health outcomes, particularly for marginalized racial and ethnic groups (Declercq et al. 2022: 1). Given the racial disparities in maternal mortality, the intersectionality of race, class, and gender must be a key focus in policy discussions. Policies should aim not only at reducing abortion restrictions but also at addressing the intersectional impact of such restrictions, which disproportionately harm women of color and low-income women (Declercq et al. 2022: 1; Dixon 2022; Upadhyay et al. 2018).

As the data indicate in Figure 2, non-Hispanic American Indian and Alaskan Native women experienced the most significant rise in maternal mortality rates during this period, highlighting the compounded effects of race, geography, and restricted access to healthcare. This research emphasizes the urgent need for comprehensive policies that address these disparities and provide equitable access to healthcare services, particularly for communities that are most vulnerable to the harmful effects of abortion restrictions.

Furthermore, as abortion restrictions intensify, the impacts on women's life expectancy, particularly for marginalized groups, are likely to worsen (Declercq et al. 2022: 1; MacDorman et al. 2016). This study shows that the policies restricting abortion not only limit reproductive choice but also contribute to overall higher maternal mortality rates and therefore poorer health outcomes, which ultimately affect life expectancy for all women. The adverse effects of these restrictions are not confined to maternal mortality alone but also extend to infant mortality (Declercq et al. 2022: 1), especially in states with restrictive abortion laws and limited access to maternal healthcare services (Hassanein 2022).

The potential repeal of the Affordable Care Act (ACA) further exacerbates these issues, as it could result in reduced access to birth control and reproductive healthcare services for many women, especially those in low-income and marginalized communities (Hasstedt 2017; Upadhyay et al. 2018). Without access to affordable contraception, women may face increased unintended pregnancies, higher abortion rates, and, consequently, more maternal health complications (Hasstedt 2017; Upadhyay et al. 2018). If abortion restrictions continue to expand alongside the erosion of healthcare coverage through the ACA, the maternal mortality crisis could worsen, with long-term consequences for both women's health and reproductive justice.

Limitations

One limitation of this study is that it does not directly connect poverty or income level data to maternal mortality at the state level. The study examined models that introduced these economic factors as additional independent variables, but they were collinear with the abortion restrictions variable. More generally, while this research has shown a relationship between state-level abortion restrictions and maternal mortality, it does not account for the individual-level experiences of women who may be marginalized by both race-ethnicity and social class. It seems likely that women who face the combined burdens of race and poverty are disproportionately at risk, with these women facing the highest mortality rates when abortion access is restricted. This intersection of race, class, and reproductive health must be acknowledged in future research and policy discussions.

Another limitation of the study is the reliance on Guttmacher Institute's cumulative classification of abortion restrictions, which may mask the individual effects of specific policy restrictions. While this approach provides a general overview of the trend, it may overlook the nuances of how different policies interact to affect access to abortion and maternal health outcomes (Jerman, Frohwirth, Kavanaugh, and Blades 2017). Jerman et al.'s 2017 analysis shows that the experience of varying restrictions, or barriers, can exacerbate a woman's experience in receiving abortion care depending on the combination of abortion restrictions. Meaning, some women were worse off in regard to care depending on which abortion restrictions they experienced. In other words, measurement error exists in part that abortion restrictions require a certain amount of interpretation by Guttmacher Institute from complex real-world legal and other health restrictions to record them in a layering manner.

Additionally, the near or total lack of trend MMR data to examine what happened after the 2022 Dobbs decision is unavoidable, but it precludes an analysis of those latest important developments. Similar to other studies conducting analyses on secondary datasets, this research does not have access to data on comorbidities or other factors that may explain the findings (Addante et al. 2021). Most importantly, while the identified correlations may imply causation (abortion restrictions as a cause of maternal mortality levels), they do not prove causation.

Conclusion

This study reveals a strong correlation between state-level hostility towards abortion and rising maternal mortality rates, particularly among marginalized racial and ethnic groups. These findings underscore the devastating consequences of abortion restrictions on women's health, especially for those already facing systemic inequities. However, the largest impact was experienced amongst non-Hispanic White women. Why might this be the case?

This follows the phenomenon described above as spatial inequality. Non-Hispanic White women are more likely to reside in rural areas, which often lack adequate maternal healthcare infrastructure (Ostmo & Rosencrans 2022). About half of rural counties in the U.S. lack hospital obstetric services, forcing women to travel significant distances—sometimes over 100 miles—for prenatal or delivery care (Center for Medicare and Medicaid Services 2019). Additionally, this finding reflects the pre-existing healthcare gaps in now-restrictive states. Rural hospitals in states with restrictive abortion policies often face closures or scale back obstetric services due to financial distress and underfunding (Ostmo & Rosencrans 2022). Such states, primarily in the South, tend to already have poorer healthcare resources and weaker Medicaid expansion programs, which could disproportionately affect non-Hispanic White women who are not eligible for social safety nets (Center for Medicare and Medicaid Services 2019). This finding also highlights the disruption of previously established reproductive healthcare access for white women. Non-Hispanic White women, who have historically relied on local reproductive health services, faced significant disruptions as clinics closed or services became inaccessible due to restrictions (Hassanein 2022). Additionally, inadequate transportation and the absence of telehealth infrastructure in rural areas further compound barriers to care. This loss of access led to delays in seeking care (Hassanein 2022), which increases risks during pregnancy and childbirth (Kozhimannil, Interrante, Henning-Smith, & Admon 2022).

Ultimately, these findings underscore the devastating consequences of abortion restrictions on women's health, especially for those already facing systemic inequities. For example, from 2009 to 2019, Arizona, Kansas, and West Virginia—states that significantly ramped up abortion restrictions—experienced dramatic increases in maternal mortality. Arizona saw a 205% increase (from 20.024 in 2009 to 61.029 in 2019), Kansas experienced a 52% increase (from 28.913 to 44.089), and West Virginia recorded a 73% increase (from 14.299 to 24.784). In contrast, Illinois, which reduced its abortion restrictions during this period, saw a 15% decrease in maternal mortality (from 19.513 in 2009 to 16.559 in 2019). Therefore, the growing body of evidence on the harms of restrictive abortion policies (Addante et al. 2021; Declercq et al. 2022; Gold and Nash 2013; Hawkens et al. 2020; Jones and Philbin 2022; Stevenson, Root, and Menken 2022; Upadhyay et al. 2018) calls for urgent policy interventions that prioritize equitable access to reproductive healthcare, especially for marginalized communities. Policymakers must not only address abortion access but also consider the intersection of race, gender, and socio-economic status in designing healthcare systems that truly serve all women.

So, what does expanding the scope of this research topic look like? Well, maternal mortality is one critical indicator of women's health, but restrictive abortion policies have far-reaching effects on broader health disparities and bodily autonomy. These policies do not just result in higher rates of maternal death; they also drive increases in maternal morbidity, which includes severe complications like hemorrhage, infection, and chronic conditions stemming from pregnancy and childbirth (Bauserman et al. 2020). Recent studies show that severe maternal morbidity affects thousands of women annually, with rural residents and women of color disproportionately impacted due to systemic inequities in healthcare access (Bauserman et al. 2020; Hassanein 2022; Kozhimannil et. al 2022). Given such research, it's important that we recognize the reasons women have abortions in the first place. Porter (2010) highlights in their study that women choose abortion for complex, overlapping reasons, including financial instability (73%), relationship problems or unwillingness to be a single parent (48%), and lack of readiness to have a child (33%). These decisions often stem from practical barriers like affordability, child care, or employment, which are exacerbated by restrictive abortion policies. When abortion access is limited, women may be forced to carry pregnancies to term under adverse conditions, increasing health risks.

Let's consider maternal morbidity and pregnancy-related injuries. Restrictive abortion policies increase maternal morbidity rates, forcing women to carry pregnancies to term even when it poses significant health risks. Conditions like severe hypertension, gestational diabetes, and pelvic floor injuries are common outcomes of forced pregnancies, leading to long-term health challenges (Bauserman et al. 2020). For rural residents and women of color, systemic barriers to healthcare amplify these risks (Hassanein 2022; Kozhimannil et. al 2022). Therefore, abortion restrictions represent a broader assault on bodily autonomy, limiting women's ability to make decisions about their health and future.For example, women denied abortions often face delays in receiving appropriate prenatal or emergency care, increasing risks of severe complications (Baguiya et al. 2024; Porter 2010). Restricting abortion access also forces women into economic instability, exacerbating mental health challenges and reducing their capacity to safeguard their well-being (Bauserman et a;. 2020).

Given the research findings and previously discussed experiences, it's safe to assume that the impact of abortion restrictions is not uniform; it disproportionately affects women who already face barriers to care. Black, Indigenous, and women of color experience higher rates of maternal mortality and morbidity due to structural racism in healthcare systems. Abortion restrictions deepen these inequities (Baguiya et al. 2024; Porter 2010). Women in rural areas face logistical and financial barriers to accessing reproductive care, leading to higher rates of adverse health outcomes (Center for Medicare and Medicaid Services 2019; Hassanein 2022). If we look further under the iceberg regarding reproductive health, it doesn't get any better. Beyond measurable health outcomes like maternal mortality and morbidity, abortion restrictions undermine women's overall well-being. Restrictive policies coincide with broader underinvestment in reproductive healthcare, leading to gaps in preventative care for conditions like heart disease, a leading cause of maternal mortality (Hassanein 2022). In totality, the

cascading effects of forced pregnancies on education, employment, and family stability perpetuate cycles of inequality, particularly for low-income and marginalized women (Bauserman et al. 2020).

By framing the issue through the lens of necropolitics and biopower, this study contributes a new perspective to the field of reproductive justice, showing how the state's control over reproductive rights disproportionately harms marginalized women and deepens existing inequities in maternal health. As the political landscape surrounding abortion rights continues to evolve, it is imperative that policymakers, healthcare professionals, and activists work collaboratively to safeguard reproductive autonomy and reduce maternal mortality. Only through intersectional approaches to healthcare and reproductive justice can we begin to dismantle the systemic barriers (Davis 2019: 9; Mosher 1990; Reagan 2022; Roberts 1999) that contribute to these tragic disparities. Future research could further explore the mechanisms through which abortion restrictions exacerbate maternal mortality, particularly by focusing on how various states' policies interact with local health infrastructure. Additionally, qualitative research on the lived experiences of women in states with the most restrictive laws could provide further insight into how such policies affect their lives beyond maternal mortality (Jerman et al. 2017).

In conclusion, this study not only highlights the urgent need to address the health consequences of restrictive abortion policies in the United States but also emphasizes the critical need for comprehensive reproductive health reform that centers the well-being of marginalized women. The health of women is the health of society, and the state's responsibility is to ensure that all women have the right and access to life-saving care.

REFERENCES

Acker, Joan. 1990. "Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations." Gender & Society, 4(2): 139-158.

Addante, Amy N., David L. Eisenberg, Mark C. Valentine, Jennifer Leonard, Karen E. Joynt Maddox, and Mark H. Hoofnagle. 2021. “The Association between State-Level Abortion Restrictions and Maternal Mortality in the United States, 1995-2017.” *Contraception* 104(5):496–501.

Al Amin, Muhammad. 2022. “Research Guides: Panel Data Using Stata: Fixed Effects and Random Effects.”

Aptheker, Herbert. 1974. “Sterilization, Experimentation and Imperialism.” *Political Affairs* 53(1):37–48.

Aizenman, D. E. 1988. “[Impact of Family Planning on Maternal-Child Health. The Future of Humanity Depends on Our Children].” *Profamilia : Planificacion, Poblacion Y Desarollo* 4(13):28–33.

Baguiya, Adama, Mercedes Bonet, Vanessa Brizuela, Cristina Cuesta, Marian Knight, Pisake Lumbiganon, Edgardo Abalos, Séni Kouanda, and WHO Global Maternal Sepsis Study Research Group. 2024. “Infection-Related Severe Maternal Outcomes and Case Fatality Rates in 43 Low and Middle-Income Countries across the WHO Regions: Results from the Global Maternal Sepsis Study (GLOSS).” *PLOS Global Public Health* 4(4):e0003109. doi: 10.1371/journal.pgph.0003109.

Bauserman, Melissa, Vanessa R. Thorsten, Tracy L. Nolen, Jackie Patterson, Adrien Lokangaka, Antoinette Tshefu, Archana B. Patel, Patricia L. Hibberd, Ana L. Garces, Lester Figueroa, Nancy F. Krebs, Fabian Esamai, Paul Nyongesa, Edward A. Liechty, Waldemar A. Carlo, Elwyn Chomba, Shivaprasad S. Goudar, Avinash Kavi, Richard J. Derman, Sarah Saleem, Saleem Jessani, Sk Masum Billah, Marion Koso-Thomas, Elizabeth M. McClure, Robert L. Goldenberg, and Carl Bose. 2020. “Maternal Mortality in Six Low and Lower-Middle Income Countries from 2010 to 2018: Risk Factors and Trends.” *Reproductive Health* 17(S3). doi: 10.1186/s12978-020-00990-z.

Belluck, Pam. 2024. “Abortion Shield Laws: A New War between the States.” *The New York Times*, February 22.

Bouie, Jamelle. 2024. “Dobbs Overturned Much More Than Roe v. Wade.” *The New York Times*, January 27.

Brockell, Gillian. 2019. “How a Sex Scandal Led to the Nation’s First Abortion Law 200 Years Ago.” *Washington Post (Washington, D.C.: 1974)*, May 16.

Chicago Daily Times. 1888a. “IV - Infanticide: The Shocking Results of the Inquiry Up to the Present Time.” *Chicago Daily Times*, December 15, 1.

Chicago Daily Times. 1888b. “XV - Infanticide: The Girl Reporter of ‘The Times’ Concludes Her Well-Told Story.” *Chicago Daily Times*, December 26, 1–5.

Center for Medicare & Medicaid Services. 2019. “Improving Access to Maternal Health Care in Rural Communities.” *Cms.gov*. Retrieved December 11, 2024

(https://www.cms.gov/About-CMS/Agency-Information/OMH/equity-initiatives/rural-health/09032019-Maternal-Health-Care-in-Rural-Communities.pdf).
Cobb, Carl L. 1972. “Students Charge BCH’s Obstetrics Unit with Excessive Surgery,” Boston Globe: 1A.
Cohen, David S., and Carole Joffe. 2023. “Ending Roe v. Wade May Have Had the Opposite Effect That Conservatives Had Hoped For.” *Slate*. Retrieved April 26, 2024 (https://slate.com/news-and-politics/2023/11/ohio-vote-abortion-access-is-growing.html).
Cunningham, Scott, Jason M. Lindo, Caitlin K. Myers, Andrea Schlosser, and National Bureau of Economic Research. 2017. *How Far Is Too Far? : New Evidence on Abortion Clinic Closures, Access, and Abortions.*
Davis, Angela Y. 1990. "Sick and Tired of Being Sick and Tired: The Politics of Black Women's Health." Pp. 18-23 in *The Black Women’s Health Book: Speaking for Ourselves.* Seattle: Seal Press
Declercq, Eugene, Ruby Barnard-Mayers, Laurie Zephyrin, and Kay Johnson. 2022. “The U.s. Maternal Health Divide: The Limited Maternal Health Services and Worse Outcomes of States Proposing New Abortion Restrictions.”
Dixon, Laura. 2022. “New Brief Shows Medicaid Patients’ Challenges Accessing Contraception after Planned Parenthood Exclusion.” *TxPEP*. Retrieved January 2, 2024 (https://sites.utexas.edu/txpep/new-brief-shows-medicaid-patients-challenges-accessing-contraception-after-planned-parenthood-exclusion/).
Dobbs v. Jackson Women's Health Organization, 597 U.S. 19-1392 (2022)
Dreweke, Joerg, and Rachel K. Jones. 2022. “100 Days Post-Roe: At Least 66 Clinics across 15 US States Have Stopped Offering Abortion Care.” *Guttmacher Institute*. Retrieved August 21, 2024 (https://www.guttmacher.org/2022/10/100-days-post-roe-least-66-clinics-across-15-us-states-have-stopped-offering-abortion-care).
Forouzan, Kimya, and Isabel Guarnieri. 2023. “State Policy Trends 2023: In the First Full Year since Roe Fell, a Tumultuous Year for Abortion and Other Reproductive Health Care.” *Guttmacher Institute*. Retrieved April 30, 2024 (https://www.guttmacher.org/2023/12/state-policy-trends-2023-first-full-year-roe-fell-tumultuous-year-abortion-and-other).
Foucault, Michel. 1978. *The History of Sexuality*. First American ed. edited by Gros Frédéric. New York: Pantheon Books.
Fuentes, Liza, Sarah Baum, Brianna Keefe-Oates, Kari White, Kristine Hopkins, Joseph Potter, and Daniel Grossman. 2020. “Texas Women's Decisions and Experiences Regarding Self-Managed Abortion.” *Bmc Women's Health* 20(1):6–6.
Giannekas, Minas. 2014. “Create Your Own Custom Map.” *MapChart*. Retrieved November 8, 2024 (https://www.mapchart.net/).

Gold, Edwin M., Harold Jacobziner, Frieda G. Nelson, and Carl L. Erhardt. 1965. “Therapeutic Abortions in New York City: A 20-Year Review.” *American Journal of Public Health and the Nations Health* 55(7):964–72.

Gold, Rachel Benson and Elizabeth Nash. 2013. “TRAP Laws Gain Political Traction While Abortion Clinics—and the Women They Serve—Pay the Price.” *Guttmacher Institute*. Retrieved January 3, 2024 (https://www.guttmacher.org/gpr/2013/06/trap-laws-gain-political-traction-while-abortion-clinics-and-women-they-serve-pay-price).

Gold, Rachel Benson and Elizabeth Nash. 2015. “State Abortion Counseling Policies and the Fundamental Principles of Informed Consent.” *Guttmacher Institute*. Retrieved January 3, 2024 (https://www.guttmacher.org/gpr/2007/11/state-abortion-counseling-policies-and-fundamental-principles-informed-consent).

Goodwin, Michele. 2020. “The Racist History of Abortion and Midwifery Bans.” *American Civil Liberties Union*. Retrieved January 2, 2024 (https://www.aclu.org/news/racial-justice/the-racist-history-of-abortion-and-midwifery-bans).

Grollman, C., Cavallaro, F. L., Duclos, D., Bakare, V., Martínez Álvarez, M., and Borghi, J. 2018. “Donor funding for family planning: Levels and trends between 2003 and 2013.” *Health Policy and Planning* 33(4): 574–582.

Guarnieri, Isabel. 2022. “13 States Have Abortion Trigger Bans—Here’s What Happens When Roe Is Overturned.” *Guttmacher Institute*. Retrieved April 30, 2024 (https://www.guttmacher.org/article/2022/06/13-states-have-abortion-trigger-bans-heres-what-happens-when-roe-overturned).

Guttmacher Institute. 2022. “Roe v. Wade Overturned: Our Latest Resources.” *Guttmacher*. Retrieved November 17, 2022 (https://www.guttmacher.org/abortion-rights-supreme-court).

Hartmann, Betsy. 1995. *Reproductive Rights and Wrongs: The Global Politics of Population Control.* Boston: South End Press.

Hassanein, Nada. 2022. “In Rural America, Maternal Health Care Is Vanishing. These Moms Are Most at Risk.” *USC Center for Health Journalism*. Retrieved December 11, 2024 (https://centerforhealthjournalism.org/our-work/reporting/rural-america-maternal-health-care-vanishing-these-moms-are-most-risk).

Hawkins, Summer Sherburne, Marco Ghiani, Sam Harper, Christopher F. Baum, and Jay S. Kaufman. 2020. “Impact of State-Level Changes on Maternal Mortality: A Population-Based, Quasi-Experimental Study.” *American Journal of Preventive Medicine* 58(2):165–74.

Hasstedt, Kinsey. 2017. “How Dismantling the ACA’s Marketplace Coverage Would Impact Sexual and Reproductive Health.” *Guttmacher Institute*. Retrieved November 18, 2024

(https://www.guttmacher.org/gpr/2017/04/how-dismantling-acas-marketplace-coverage-would-impact-sexual-and-reproductive-health).

Howard, Sally and Geetanjali Krishna. 2022. “Roe V Wade: How Its Scrapping Will Affect Women Worldwide.” *Bmj* O1844:1844.

Hurdle, Jon, and Trip Gabriel. 2013. “Philadelphia Abortion Doctor Guilty of Murder in Late-Term Procedures.” *The New York Times*, May 13.

Jerman, Jenna, Lori Frohwirth, Megan L. Kavanaugh, and Nakeisha Blades. 2017. “Barriers to Abortion Care and Their Consequences for Patients Traveling for Services: Qualitative Findings from Two States.” *Perspectives on Sexual and Reproductive Health* 49(2):95–102. doi: 10.1363/psrh.12024.

Johnson, Alexis Mcgill. 2021. “I’m the Head of Planned Parenthood. We’re Done Making Excuses for Our Founder.” *The New York Times*, April 17.

Jones, Rachel K., Jacqueline E. Darroch, and Stanley K. Henshaw. 2002. “Patterns in the Socioeconomic Characteristics of Women Obtaining Abortions in 2000-2001.” *Perspectives on Sexual and Reproductive Health* 34(5):226–35.

Jones, Rachel K., and Megan L. Kavanaugh. 2011. “Changes in Abortion Rates between 2000 and 2008 and Lifetime Incidence of Abortion.” *Obstetrics and Gynecology* 117(6):1358–66. doi: 10.1097/aog.0b013e31821c405e.

Jones, Rachel K., Laura Lindberg, and Elizabeth Witwer. 2020. “Covid-19 Abortion Bans and Their Implications for Public Health.” *Perspectives on Sexual and Reproductive Health* 52(2):65–68.

Jones, Rachel K., and Jesse Philbin. 2022. “Long-Term Decline in US Abortions Reverses, Showing Rising Need for Abortion as Supreme Court Is Poised to Overturn Roe v. Wade.” *Guttmacher Institute*. Retrieved April 30, 2024 (https://www.guttmacher.org/article/2022/06/long-term-decline-us-abortions-reverses-showing-rising-need-abortion-supreme-court).

Jones, Rachel K., Elizabeth Witwer, and Jenna Jerman. 2019. “Abortion Incidence and Service Availability in the United States, 2017.” *Guttmacher Institute*. Retrieved April 30, 2024 (https://www.guttmacher.org/report/abortion-incidence-service-availability-us-2017).

Justia. 2024. “US Laws, Codes & Statutes.” *Justia Law*. Retrieved January 3, 2024 (https://law.justia.com/codes/).

Kavakli, Kerim Can, and Valentina Rotondi. 2022. “US Foreign Aid Restrictions and Maternal and Children’s Health: Evidence from the ‘Mexico City Policy.’” *Proceedings of the National Academy of Sciences of the United States of America* 119(19). doi: 10.1073/pnas.2123177119.

Latt, Su Mon, Allison Milner, and Anne Kavanagh. 2019. “Abortion Laws Reform May Reduce Maternal Mortality: An Ecological Study in 162 Countries.” *Bmc Women’s Health* 19(1):1–1.

Kozhimannil, Katy Backes, Julia D. Interrante, Carrie Henning-Smith, and Lindsay K. Admon. 2019. “Rural-Urban Differences in Severe Maternal Morbidity and Mortality in the US,

2007–15." *Health Affairs (Project Hope)* 38(12):2077–85. doi: 10.1377/hlthaff.2019.00805.

Loudon, I. 1988. "Maternal Mortality: 1880-1950. Some Regional and International Comparisons." *Social History of Medicine : The Journal of the Society for the Social History of Medicine* 1(2):183–228.

MacDorman, Marian F., Eugene Declercq, Howard Cabral, and Christine Morton. 2016. "Recent Increases in the U.s. Maternal Mortality Rate: Disentangling Trends from Measurement Issues." *Obstetrics and Gynecology* 128(3):447–55. doi: 10.1097/aog.0000000000001556.

Maddow-Zimet, Isaac, and Candace Gibson. 2024. "Despite Bans, Number of Abortions in the United States Increased in 2023." *Guttmacher Institute*. Retrieved April 30, 2024 (https://www.guttmacher.org/2024/03/despite-bans-number-abortions-united-states-increased-2023).

Maher v Roe, 432 U.S.464 (1977)

Maheshwari, Bharti, G. S. Manchanda, Preeti Sharma, and Taniya Setiya. 2021. "Abortion and Contraception Practices in Covid-19 Era." *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* 10(5):1874–74.

Mbembe, J. A., and Meintjes, L. (2003). Necropolitics. Public Culture, 15(1), 11–30.

Mosher, William D. 1990. "Use of Family-Planning Services in the United States: 1982 and 1988." Pp. 2-3 in *Advance Data from Vital and Health Statistics: Numbers 181-190*. Hyattsville, Md.: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Health Statistics

Nash, Elizabeth, Rachel Benson Gold, Lizamarie Mohammed, Zohra Ansari-Thomas, and Olivia Cappello. 2018. "Policy Trends in the States, 2017." *Guttmacher Institute*. Retrieved January 3, 2024 (https://www.guttmacher.org/article/2018/01/policy-trends-states-2017).

Ostmo, Per. 2022. "Recap Details: Maternal Health Disparities: An Intersection of Race and Rurality - Rural Health Research Gateway." *Ruralhealthresearch.org*. Retrieved December 11, 2024 (https://www.ruralhealthresearch.org/recaps/17).

Raymond, Elizabeth G., and David A. Grimes. 2012. "The Comparative Safety of Legal Induced Abortion and Childbirth in the United States." *Obstetrics and Gynecology* 119(2, Part 1):215–19. doi: 10.1097/aog.0b013e31823fe923.

Reagan, Leslie J. 2022. *When Abortion Was a Crime : Women, Medicine, and Law in the United States, 1867-1973*. [New edition] ed. Oakland, California: University of California Press.

Reynolds, Kevin. 2021. "How Today's near-Total Abortion Ban in Texas Was 20 Years in the Making." *The Texas Tribune*, November 1.

Roberts, Dorothy E. 1999. *Killing the Black Body : Race, Reproduction, and the Meaning of Liberty*. Second Vintage books edition. Twentieth anniversary ed. New York: Vintage Books, a division of Penguin Random House LLC.

Roe v. Wade, 410 U.S. 113 (1973)

Rothert, Frances Catherine and United States. Children's Bureau. 1934. *Maternal Mortality in Fifteen States*. Washington: U.S. G.P.O.

Roy, Deblina and Mebarisha I. Khongriah. 2021. "Abortion." *Encyclopedia of Evolutionary Psychological Science* 1(1): 13-19.

Stevenson, A. J., L. Root, and J. Menken. 2022. "The Maternal Mortality Consequences of Losing Abortion Access". Retrieved (osf.io/preprints/socarxiv/7g29k).

Suh, Siri. 2021. *Dying to Count : Post-Abortion Care and Global Reproductive Health Politics in Senegal*. New Brunswick, NJ: Rutgers University Press.

The Guttmacher Institute. 2016. "State Facts about Abortion." *Guttmacher Institute*. Retrieved January 3, 2024 (https://www.guttmacher.org/fact-sheet/state-facts-about-abortion).

The Guttmacher Institute. 2021. "State Legislation Tracker." *Guttmacher Institute*. Retrieved January 3, 2024 (https://www.guttmacher.org/state-legislation-tracker).

Upadhyay, Ushma D., Nicole E. Johns, Rebecca Barron, Alice F. Cartwright, Chantal Tapé, Alyssa Mierjeski, and Alyson J. McGregor. 2018. "Abortion-Related Emergency Department Visits in the United States: An Analysis of a National Emergency Department Sample." *BMC Medicine* 16(1). doi: 10.1186/s12916-018-1072-0.

United States. Congress. House. Committee on Oversight and Reform. 2021. *Birthing While Black : Examining America's Black Maternal Health Crisis : Hearing Before the Committee on Oversight and Reform, House of Representatives, One Hundred Seventeenth Congress, First Session, May 6, 2021*. Washington: U.S. Government Publishing Office.

van der Meulen Rodgers, Y. 2018. *The Global Gag Rule and women's reproductive health: Rhetoric versus reality.* New York: Oxford University Press.

Venator, Joanna, and Jason Fletcher. 2019. *Undue Burden beyond Texas: An Analysis of Abortion Clinic Closures, Births, and Abortions in Wisconsin*. Cambridge, MA: National Bureau of Economic Research.

Wendland, Claire L. 2022. "Countless Accountings." Pp. 188-227 in *Partial Stories: Maternal Death from Six Angles*. Chicago, IL: University of Chicago Press.

WHO, UNICEF, UNFPA, World Bank Group, and the United Nations Population Division. 2019. "Maternal Mortality: Levels and Trends 2000 to 2017." *World Health Organization*. Retrieved April 30, 2024 (https://www.who.int/publications-detail-redirect/9789241516488).

APPENDIX A: Guttmacher hostility scores for 2010, 2017, and 2019

States	2010 New	2010 Old	2017 New	2017 Old	2019 New	Proposed 2019 Old
Alabama	-4	5	-5	7	-5	7
Alaska	2	1	2	2	2	1
Arizona	-3	2	-5	8	-5	8
Arkansas	-3	4	-6	8	-6	8
California	5	1	6	0	6	0
Colorado	-1	3	0	3	0	3
Connecticut	3	0	3	0	3	0
Delaware	-2	2	-1	2	-1	2
Florida	-2	4	-2	6	-2	6
Georgia	-3	4	-3	5	-3	5
Hawaii	3	0	4	0	4	0
Idaho	-3	4	-3	4	-3	5
Illinois	0	2	0	3	3	1
Indiana	-5	5	-6	9	-6	9
Iowa	-3	3	-2	4	-2	4
Kansas	-1	2	-3	8	-3	8
Kentucky	-3	4	-5	6	-5	6
Louisiana	-4	7	-6	10	-6	10
Maine	1	1	1	1	1	1
Maryland	2	1	2	1	2	1
Massachusetts	1	2	1	2	1	2

Michigan	-3	5	-4	7	-3	5
Minnesota	2	2	2	2	2	2
Mississippi	-4	8	-6	10	-6	10
Missouri	-4	5	-5	7	-6	10
Montana	3	1	3	1	3	1
Nebraska	-3	5	-4	7	-4	7
Nevada	0	2	0	2	0	2
New Hampshire	0	1	-1	2	-1	2
New Jersey	2	0	3	0	3	0
New Mexico	3	0	3	0	3	0
New York	1	1	2	1	4	1
North Carolina	-2	4	-4	6	-4	6
North Dakota	-3	6	-5	7	-5	7
Ohio	-4	6	-5	7	-5	7
Oklahoma	-3	5	-5	8	-5	8
Oregon	2	0	3	0	4	0
Pennsylvania	-4	5	-4	5	-4	5
Rhode Island	-2	4	-2	4	0	2
South Carolina	-4	5	-5	6	-5	6
South Dakota	-4	5	-6	9	-6	9
Tennessee	-2	3	-5	6	-5	6
Texas	-3	5	-5	9	-5	9
Utah	-5	6	-5	7	-5	7
Vermont	2	0	2	0	3	0
Virginia	-3	4	-4	7	-4	7

Washington	4	0	4	0	4	0
West Virginia	0	2	-2	4	-4	6
Wisconsin	-2	3	-4	6	-4	6
Wyoming	-3	3	-2	3	-2	3