The Impact of Abortion Restrictions on Women's Mental Health: A State-Level Analysis

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This study examines the impact abortion restrictions and bans have on women's mental health in the United States. Using state-level data, I ran several regressions to determine the effect of states' abortion policies on the rate of frequent mental distress in women. Even while controlling for poverty and exploring the possible mechanism of pregnancies wanted later or unwanted ending in birth as accounting for this relationship, it became apparent abortion laws in a state account in part for the rate of frequent mental distress in women. I conclude by reflecting on the impact of bodily autonomy and state surveillance on women and urge states to protect abortion to preserve the health of women and children.

INTRODUCTION

In June 2022, the Supreme Court overturned *Roe v. Wade*. Following this historic decision, thirteen states banned most abortions, with others expected to follow suit. It is expected that roughly half of U.S. states will restrict abortion. Though abortion is currently legal in some of these states, the courts will ultimately decide whether that remains the case (McCann et al. 2023). Though these bans and restrictions aim to reduce the number of abortions taking place, data demonstrates that women will continue to have abortions (Sidik 2022). The World Health Organization (WHO) argues that abortion rates are lower in countries where abortion is legal (Sidik 2022). The impact of restricting abortion is well-documented: women will have to travel farther to get abortions, clinics in states where abortion remains legal will see longer wait times, many women denied an abortion will endure unwanted pregnancies/births and financial insecurity, abortions will become less safe, and maternal deaths will increase (Sidik 2022).

Not only do these laws harm women, but they harm children. The states most hostile to abortion had the worst health outcomes for mothers and children (Treisman 2022). Due to this decision, there will be more child poverty, more babies born with a low birth weight, pregnant people will have less access to care (increasing maternal mortality), and there will be less financial support for families and children (Treisman 2022). These outcomes can be partially attributed to states banning and restricting abortion having the weakest maternal supports (Treisman 2022). Furthermore, these laws disproportionally impact people of color, people living in poverty, young people, and other disadvantaged groups, deepening current inequities (Fuentes 2023).

The ramifications of these laws highlight the impact of policy on health and well-being, with policy helping to shape the social determinants of health (Mishori 2019). The decisions made by the federal, state, and local governments impact residents' well-being. States' lack of investment in social programs have not only made the U.S. less healthy but have worsened existing racial inequities (Sullivan 2019). Abortion policy falls within this framework, making it a political determinant of women's health. As stated above, the U.S. states most hostile toward abortion rights generally fare worse in terms of health and well-being and are often the least supportive of mothers and children (Badger et al. 2022; Treisman 2022).

Though the physical and economic impacts of denying women abortions are well-documented (World Health Organization 2009; Steinberg and Rubin 2014; Ogbu-Nwobodo 2022; Kapadia 2022; Sidik 2022; Treisman 2022), less is known about the impact of these bans and restrictions on women's mental health and well-being.

This study looks at the link between women's mental health and reproductive healthcare access in the context of the *Dobbs* decision. I assess whether and to what extent states' abortion laws impact women's mental health while adjusting for poverty. Furthermore, I investigate whether differential rates of unwanted pregnancies ending in birth function as a mediating variable. In conducting this analysis, I hope to gain a more comprehensive understanding of the impact of the overturning of *Roe v. Wade* on women's mental health and well-being across the United States.

LITERATURE REVIEW

Social Determinants of Health

Social factors in disease causation, such as socioeconomic status (SES), race/ethnicity, and gender, must be prioritized (Link and Phelan 1995), as the extant literature finds that social and environmental factors strongly influence health outcomes. Our social identities, such as gender and race, are innately tied to power (money, prestige, and social connections), influencing the social patterning of disease (Link and Phelan 1995). Certain demographics are at a much higher risk for poor health outcomes, resulting in health disparities (Gehlert et al. 2008); people of lower SES, youth and adolescents, women, blacks, and Hispanics (barring psychological conditions), and unmarried people see worsened health outcomes (Gehlert et al. 2008; Thoits 2010).

These health disparities can be partly attributed to stress, with disadvantaged social groups and minorities experiencing higher rates of mental health issues, disability, illness, injury, and mortality (Thoits 2010). This chronic stress is understood as allostatic load (Braveman and Gottlieb 2014). Though anyone can experience a stressful life event, it is the cumulative impact

of chronic stress and lack of resources that quite literally gets under the skin. Minorities and those living in poverty are more likely to experience this toxic stress. This can change people at the biological level, impacting the regulation of genes and influencing epigenetic processes (Braveman and Gottlieb 2014).

Having a lower socioeconomic status exposes one to a plethora of physical and mental stressors, making it one of the strongest determinants of health (Link and Phelan 1995). More immediate health impacts relate to one's environment–one's neighborhood and working conditions: neighborhood status influences walkability, the availability of alcohol and drugs, nutritious food, prevalence of violence, tobacco use, and educational quality–among many other things (Braveman and Gottlieb 2014). Further down the line, the stress of living in poverty results in chronic disease and earlier death (Braveman and Gottlieb 2014; Link and Phelan 1995; Chetty et al. 2016). As referenced above, allostatic load explains why childhood poverty is strongly linked to worsened health outcomes. The cumulative toxic stressors in their social environment impact brain development (McEwen and McEwen 2017). This explains why those who grow up poor are more likely to be poor as adults (McEwen and McEwen 2017).

Another determinant of health is race, with the chronic stress of racism impacting health negatively (Braveman et al. 2011). Though racial differences in health were substantially reduced after adjusting for socioeconomic factors, race alone cannot be ignored when looking at health disparities (Braveman and Gottlieb 2014; Phelan and Link 2015). Independent of racial differences in SES, systemic racism contributes to differences in health outcomes by way of flexible race-related resources (Link and Phelan 2015). Link and Phelan (2015) characterize these flexible race-related resources as nonoccupational prestige and power, beneficial social connections, and freedom. Prestige is related to negative racial stereotypes and implicit biases among whites for whites (Link and Phelan 2015); whites also have more power and control in society independent of SES (Link and Phelan 2015). Racial neighborhood segregation also influences this, as one's neighborhood shapes social connections and determines access to resources (Link and Phelan 2015). Freedom relating to imprisonment, harassment, discrimination, and being unable to dress, behave, move, or live where one wants influences this (Link and Phelan 2015). In fact, Silverstein (2013) argues that racial profiling is a determinant of health, as discrimination and fear of discrimination cause poor health. Most studies on racism and health have focused on the impact of interpersonal discrimination, with there being less of a focus on the impact of structural racism (Bailey et al. 2017). Despite this, structural racism causes injustice across a multitude of realms: housing, employment, the environment (placement of waste sites, etc.), inequitable marketing (tobacco, alcohol, etc.), state-sanctioned violence, and political exclusion (Bailey et al. 2017).

Looking at Gender in Particular

In the U.S., men live longer than women, but women have higher morbidity rates and a lower quality of life in their later years (Rieker et al. 2010). Some factors causing this phenomenon include the gendered division of labor, men eating more meat and fatty foods, and fewer childbirth-related deaths due to modern medicine (Lorber and Moore 2002).

Women seem to internalize negative mental states, while men seem to externalize them: women have higher rates of depression and anxiety, and men have higher rates of antisocial behaviors and addiction to drugs and or alcohol (Rieker et al. 2010). Some studies have likened

this, in part, to biological causes, while social scientists believe that the difference in mental health problems could be attributed to gender inequality (Rieker et al. 2010).

The World Health Organization (2001:28,29) recognizes that women's mental health cannot be reduced to mental disorders and afflictions; "the structures that govern the provision of health-related education, information and health care delivery, the processes that influence women's interactions with the health care system and the factors that determine whether the treatment they receive is gender sensitive." Women's health is not only impacted by these social structures, but women's perception of equity and equality directly impacts their health as well (Stein 1997).

Mental health status is variable among women for a plethora of reasons. First off, it is essential to acknowledge that different groups hold different conceptualizations of mental health and well-being, with different definitions of normal (Safran et al. 2009). The predominant paradigm in the U.S. is Eurocentric; this use of culturally nonvalid psychometric assessments has the potential to harm these populations (Safran et al. 2009).

This paradigm sees mental health disparities as having a different pattern than other health disparities (Miranda et al. 2008). Race patterns mental health status, with Hispanics, Asian Americans, and Black Americans generally having fewer mental disorders than whites (Miranda et al. 2008; Wells-Wilbon et al. 2021). Sexuality also impacts mental health, with queer people being more likely to suffer from mental health issues than their straight counterparts (Wells-Wilbon et al. 2021).

In addition to differences in status, the different life experiences women face impact mental health. Poverty, which women are more likely to experience, is a potent determinant of women's mental health (Belle 1990; Stewart 2007; Singh 2020; Molewyk Doornbos et al. n.d.; Wells-Wilbon 2021). Lack of resources, which SES often influences, also impacts women's mental state negatively. Some of these resources include social support, social connection, equality, opportunities, safety, food, and shelter (Belle 1990; McLean 2022; Molewyk Doornbos et al. n.d.; Yu 2018). Several studies have also linked violence and abuse to worsened mental health outcomes for women (Stewart 2007; Romito et al. 2005; Singh 2020; Wells-Wilbon 2021). Reproductive health was another strong determinant of women's mental health (Singh 2020; Stewart 2007; Yu 2018).

Political Determinants of Health

Further neglected are the social institutions that shape the social determinants of health. Those residing in democracies are healthier than those living under repressive regimes (Mishori 2019). That said, there is variation in health among democracies due to differences in policy (Mishori 2019). Health care and public health policies directly impact health. Other social policies influence health indirectly due to their influence on social or economic outcomes (Osypuk et al. 2014). For example, political decisions impact access to care, drug prices, reproductive and women's health, gun violence, and the health of immigrants, which directly impact population health (Mishori 2019).

This variance can be applied to different states in the U.S. For example, Llamas, Borkowski, and Wood (2018) found that a state's reproductive health climate influences infant health outcomes. Babies born in more hostile states were more likely to be born prematurely and have low birth weights (Llamas et al. 2018). This can also be potentially attributed to other policies (studies of this nature demonstrate associations rather than causality) that a state may

have. States with more reproductive rights generally have other policies (nutritional policies and Medicaid eligibility limits, for example) that impact health in a positive way (Llamas et al. 2018).

Recent research suggests that the more a state or locality spends on social and economic policies, the better the health outcomes for its citizens. Investment in social programs such as Medicaid, Children's Health Insurance Program (CHIP), behavioral health services, and other health promotion efforts yields positive health benefits (Sullivan 2019). Investment in education, transit and transportation, and unemployment insurance, among other things, also impact health positively (Sullivan 2019).

The Corresponding Relationship Between Reproductive Health and Mental Health

A growing body of literature has recognized that poor sexual and reproductive health result in poor mental health and, conversely, that poor mental health can result in reproductive health vulnerabilities (World Health Organization 2009; Zender and Olshanksy 2009; Steinberg and Rubin 2014; World Health Organization 2009; Kelly et al. 2019; Kapadia 2022; Frontiers in Global Women's Health n.d.). For example, a recent study suggests that mental health and reproductive health are strongly intertwined for girls in the juvenile justice system (Kelly et al. 2019). A multitude of different factors contribute to this relationship. On a physiological level, a women's hormone profile can impact a women's mental health (Zender and Olshansky 2009). In fact, research suggests that females are twice as likely as males to experience depression from puberty onward due to the influence of estrogen and progesterone and their impact on brain function/stress response (Zender and Olshansky 2009). Due to this, ensuring reproductive health through maintaining healthy hormone levels is imperative for women's mental health.

Contraception, pregnancy, and abortion also influence women's reproductive and mental health (Steinberg and Rubin 2014). These are common experiences for women of reproductive age: by the age of 45, 30% of U.S. women will have had an abortion, and 99% of U.S. women in the U.S. who have sex will use contraception during their reproductive years (Steinberg and Rubin 2014). In their review of the literature, Steinburg and Rubin (2014) found no association between contraceptive use and depressive symptoms, nor did they find an association between having an abortion and mental health issues. In most studies, depressive symptoms impact women's contraceptive use, resulting in inconsistent use, incorrect use, discontinuation of use, or no use at all. These behaviors result in unintended pregnancy and abortion. Unintended pregnancy can result in worsened mental health outcomes for women, including antepartum and postpartum depression (World Health Organization 2009; Steinberg and Rubin 2014; Medoff 2014).

Several factors, such as being thrust into poverty (or worsened poverty), not having a partner, or having a violent one, contribute to pregnancy-related depression (Steinberg and Rubin 2014). Additionally, women carrying unintended pregnancies may experience stress and other emotions stemming from unanticipated changes that come with carrying an unintended pregnancy. Unintended pregnancies also result in financial strain for many women, as women who have unintended pregnancies are more likely to be poor and or unmarried (Steinberg and Rubin 2014). This financial strain negatively impacts women's mental health, as living in poverty is a known, major determinant of overall health and well-being, as reported in the literature for quite some time now (Belle 1990).

Though hormonal makeup and reproductive processes such as pregnancy impact mental health, access to reproductive healthcare also plays a role.

The Influence of Reproductive Healthcare Access on Women's Reproductive and Mental Health

Restricting reproductive healthcare access results in worse health outcomes for women across the board (Treisman 2022). First off, women's emotional well-being is interdependent on their freedom of choice (World Health Organization 2009). Therefore, stripping women of their reproductive autonomy negatively impacts their mental health and well-being (Stein 1997; World Health Organization 2001; World Health Organization 2009).

Limiting reproductive healthcare also deepens racial, gender, and class inequalities, particularly for those who struggle with their mental health: this impacts mental well-being and, therefore, the decisions that women make throughout their reproductive years (Ogbu-Nwobodo et al. 2022). These laws also disproportionally impact women and children living in rural areas and women and children of color (Kapadia 2022).

Recent studies have also found that women find (and in some cases prefer) mental health support from their reproductive healthcare providers (Hoffmire et al. 2022; Hall et al. 2017). Limiting reproductive healthcare services will result in women not getting the mental health support they need.

The Implications of Overturning Roe v. Wade

Though supporters of abortion restrictions and bans argue that having an abortion negatively impacts women's mental health, studies consistently find no support for such a claim (Ogbu-Nwobodo et al. 2022). For example, Biggs et al. (2017) found that women who got an abortion fared similarly to or better than women who were denied an abortion. This can possibly be attributed to the fact that facing an unintended pregnancy or unsafe abortion is very stressful, whereas abortion may protect at-risk women from the strain of unplanned pregnancy and parenthood (World Health Organization 2009). Additionally, qualitative research suggests that experiencing an unsafe abortion (due to abortion being banned or restricted or socially frowned upon) can be traumatic, resulting in consequences for mental health (World Health Organization 2009).

It is also important to acknowledge that women seeking abortions are more likely to have struggled with their mental health due to structural inequalities and a higher likelihood of having experienced violence and abuse (Ogbu-Nwobodo et al. 2022; World Health Organization 2009). Women being denied an abortion are more likely to live in poverty. This results in difficulty accessing health care for themselves and their children, food insecurity, worse-quality relationships, and education for their children, in addition to worsened parenting capability (Kapadia 2022). Limiting abortion strengthens these inequalities, strengthening the reciprocal relationship between reproductive and mental health, resulting in worse outcomes for both. This may result in the opposite of what those looking to restrict abortion intend to achieve: more unintended pregnancies and more abortions.

As the literature above states, health is in part shaped by social factors, including social institutions like the state: the policies governments make directly impact our health. Though there is a gap in the literature examining how restricting abortions impacts women's mental

health at the state-level, the literature referenced above suggests that it will be harmful (Badger et al. 2022; Biggs et al. 2017; Hall et al. 2017; Hoffmire et al. 2022; Llamas et al. 2018; Yu 2018; Treisman 2022; Singh 2020; Sidik 2022; Osypuk et al. 2014; Ogbu-Nwobodo et al. 2022; Medoff 2014; Mishori 2019). The literature above suggests that women's mental and reproductive health are interdependent: poor mental health results in poor reproductive health and vice versa. Reproductive health care directly impacts reproductive health, and abortions are considered reproductive health care. Perceived societal equity also impacts women's health. Restricting women's reproductive autonomy is an infringement on their rights. In this study, I will be applying these findings to state-level data, looking to see if there is an association between state abortion laws and women's mental well-being in that state. To assess this, I regress the rate of women's frequent mental distress against states' abortion regime while controlling for rates of female poverty and pregnancies unwanted or wanted later ending in birth.

METHODS AND DATA

The data used in this study consists of state-level (plus D.C.) measures of abortion law regime, rates of mental distress in child-bearing age women, unwanted pregnancies ending in birth, and female poverty.

Abortion Laws

I took abortion law measures from the Center for Reproductive Rights. This classification system originally showed what *could* happen to abortion rights in D.C. and U.S. states/territories if the Supreme Court were to overturn *Roe v. Wade*. However, with the Supreme Court overturning *Roe v. Wade* in June 2022, the classification system now reflects the impact of that decision (see Figure 1).

The classification system has five categories: Expanded Access, Protected, Not Protected, Hostile, and Illegal. Expanded Access means that abortion is not only protected by law but that there are other laws in place to ensure access; this includes unrestricted access for young people, a range of healthcare practitioners providing abortions, protections for clinic access, protections for clinic safety, public funding, and the requirement that abortion is included in private insurance coverage (Center for Reproductive Rights 2023). Protected means that abortion is protected by law but with limits to access (Center for Reproductive Rights 2023). Not Protected means that abortion may be accessed in these areas but that it is not protected by law (Center for Reproductive Rights 2023). Hostile means that these areas want to ban abortion and have laws/policies in place restricting access. Illegal means that these areas have banned abortion. Hostility and illegality were determined through bans and restrictions. States with the following were determined as hostile or very hostile: states that did not repeal their pre-*Roe* abortion bans, states that had trigger bans, pre-viability gestational bans, reason bans, restrictions on abortion type, TRAP laws, parental involvement laws, among other bans/restrictions (Center for Reproductive Rights 2023).

Though this classification system now reflects the U.S. post-*Roe*, I am using these categories as indicators of where states stood before the overturning of *Roe*. Confident that the states categorized as Illegal were very hostile toward abortion rights before the *Dobbs* decision, I reclassified them as Very Hostile.

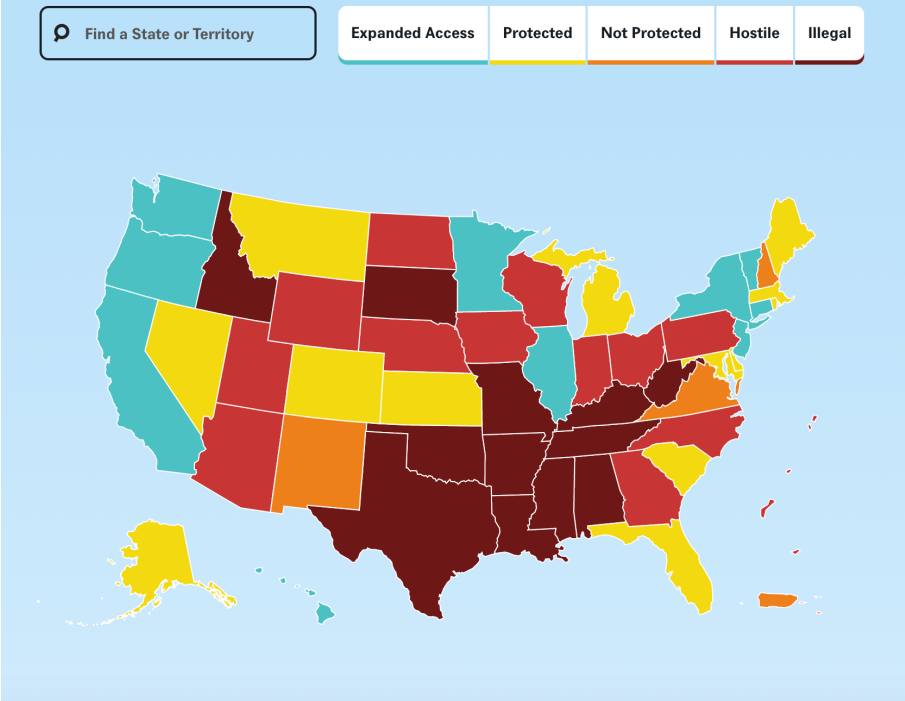

Figure 1. Abortion regime by state.

Women's Mental Health

This study used frequent mental distress data from the United Health Foundation's America's Health Rankings to measure women's mental health. The variable is defined as the percentage of women ages 18-44 who reported their mental health was not good for 14 or more days in the past 30 days. The United Health Foundation sourced this data from the CDC, Behavioral Risk Factor Surveillance System, 2019-2020 (America's Health Rankings 2022a).

As poverty is a determinant of women's mental health and is potentially associated with states' broader policy environments, this study also incorporates the percentage of women 18-44 living below the poverty level. I acquired this data from the United Health Foundation's America's Health Rankings, which got their data from the U.S. Census Bureau's 2019 American Community Survey (America's Health Rankings 2022b).

To further account for any possible mechanisms helping to account for any association between states' abortion regimes and rates of mental distress, this study took data from the Guttmacher Institute on the percentage of pregnancies unwanted or wanted later ending in birth in 2017. Carrying an unwanted pregnancy and subsequently having to care for a child has repercussions for mental health, and this study seeks to understand if this is driving the results or if the laws themselves have an independent impact on women's mental health (Guttmacher Institute 2023).

Methods

I used Stata statistical software to conduct bivariate and multiple regression analyses. I will not attend to sampling error, p-values, or statistical significance, as the regression coefficients represent the modeled parameters (average effects).

Table 1. Descriptive Statistics of Regression Variables.

	Mean	SD	Min	Max
Dependent Variable				
% Women in Frequent Mental Distress	20.6	3.2	14.9	27.8
Independent Variables				
% of Women in Poverty	15.6	3.4	10.1	25.1
% of Pregnancies Wanted Later or Unwanted Ending in Birth	52.9	10.1	29	69
	% (n)			
State Abortion Regime				
Expanded Access	19.6 (10)			
Protected	27.5 (14)			
Not Protected	5.9 (3)			
Hostile	23.5 (12)			
Very Hostile	23.5 (12)			

Note: Percentages may not add up to 100 because of rounding.

Table 1 outlines the descriptive statistics of the variables used in my regression models. The rate of women in frequent mental distress ranges from 14.9 to 27.8 percent, with an average of 20.6 percent. The rate of women living below the poverty level ranges from 10.1 to 25.1 percent, with an average of 15.6 percent. Women carrying pregnancies wanted later or unwanted ending in birth ranges from 29 to 69 percent, with the average being 52.9 percent.

FINDINGS

My independent variable is state abortion regime (D.C. included). Out of the 50 states and D.C., 10 have expanded access to abortion, 14 protect abortion by law, 3 do not protect abortion by law, 12 are hostile towards abortion, and 12 are very hostile towards abortion (and have banned abortion post-*Dobbs*).

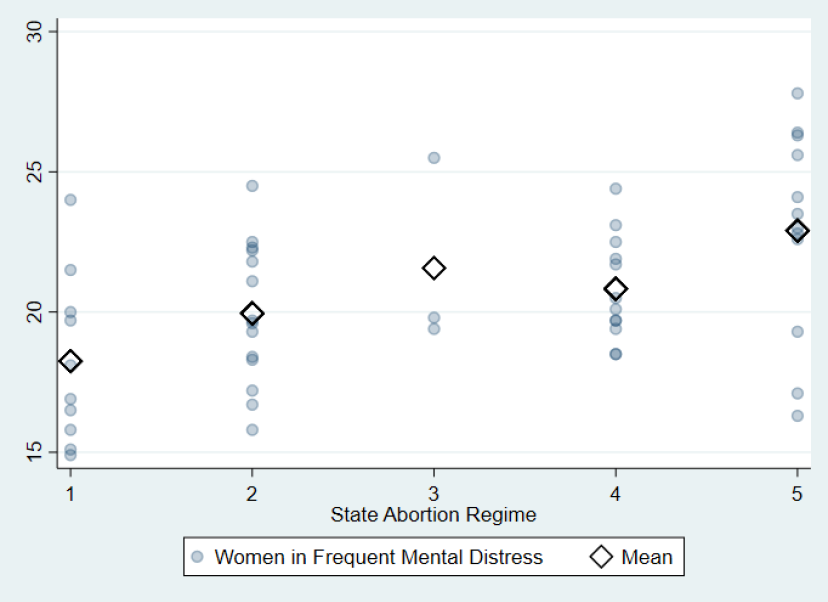

Figure 2. Women in Frequent Mental Distress by State Abortion Regime.

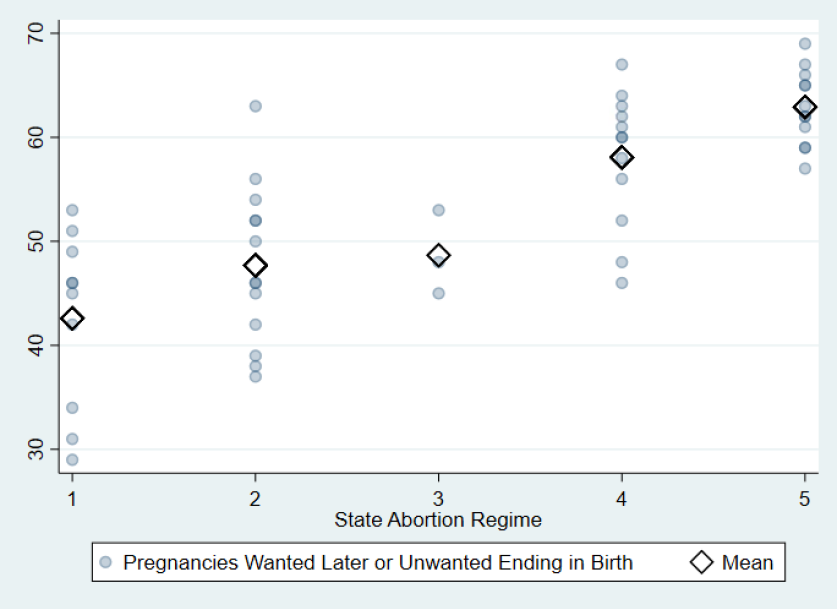

Figure 3. Pregnancies Wanted Later or Unwanted Ending in Birth by State Abortion Regime.

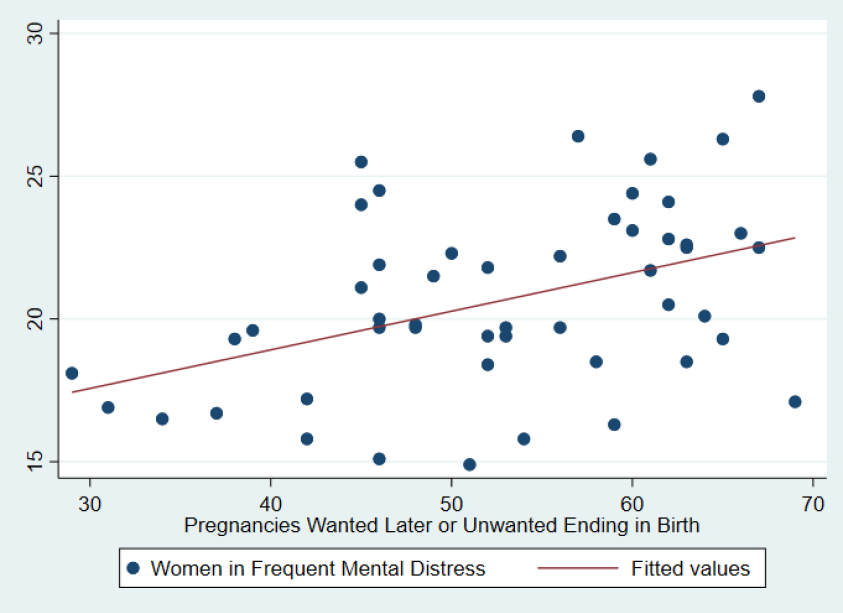

Figure 4. Relationship between Pregnancies Wanted Later or Unwanted Ending in Birth and Frequent Mental Distress.

Figure 2 demonstrates that states with more hostile abortion regimes see more women in frequent mental distress. From least to most hostile, the rates of women in frequent mental distress are 18.3%, 20.0%, 21.6%, 20.8%, and 22.9%. Figure 3 similarly shows that there are more pregnancies wanted later or unwanted ending in birth in states with more hostile abortion regimes. From least hostile to most hostile, the average rate of pregnancies wanted later or unwanted ending in birth is 42.6%, 47.7%, 48.67%, 58.08% and 62.92%. Figure 4 demonstrates a positive correlation between the rate of pregnancies wanted later or unwanted and the rate of women in frequent mental distress.

Table 2. Results of OLS Regressions Modeling Women's Mental Distress.

	Model 1	Model 2	Model 3
State Abortion Regime (ref: Expanded Access)			
Protected	1.71 (1.18)	1.23 (1.11)	1.07 (1.19)
Not Protected	3.32 (1.88)	2.50 (1.77)	2.25 (1.83)
Hostile	2.58 (1.22)	1.71 (1.18)	1.03 (1.50)
Very Hostile	4.65 (1.22)	2.13 (1.44)	1.30 (1.87)
% of Women in Poverty		0.41 (0.15)	0.40 (0.15)

% of Pregnancies Wanted Later or Unwanted			0.05 (0.06)
Constant	18.25 (0.90)	12.78 (2.10)	11.04 (3.23)
R^2	0.26	0.37	0.37

N=51.

Table 2 presents three models looking at women's frequent mental distress. Model 1 regresses rate of frequent mental distress against state abortion regime. In Protected states, the rate of mental distress is 1.71 percentage points higher, on average, than in Expanded Access states (the reference group). In Not Protected states, the rate of mental distress is 3.32 percentage points higher, on average. In Hostile states, the rate of mental distress is 2.58 percentage points higher, on average. In Very Hostile states, the rate of mental distress is 4.65 percentage points higher, on average. Model 1 demonstrates that state abortion regime impacts rate of frequent mental distress.

Model 2 regresses rate of frequent mental distress against state abortion regime, while adjusting for female poverty rate. Female poverty rate has a positive effect on frequent mental distress, with each percentage point increase in poverty increases the rate of mental distress by 0.41 points, on average. After adjusting for female poverty rate, the abortion regime effects have all decreased in size (relative to Model 1). This decrease in size suggests the original effects were, in part, capturing the effect of states' poverty rates on women's mental health. Nonetheless, abortion laws retain notable effects, with all the reported regime types reporting higher mental distress rates, on average, relative to Expanded Access states.

Model 3 regresses rate of frequent mental distress against state abortion regime, while accounting for female poverty rate and rate of pregnancies wanted later or unwanted. Both have a positive effect on mental distress. Each percentage point increase in poverty and unwanted pregnancies increases the rate of mental distress by 0.41 and 0.05 points, on average, respectively. Having adjusted for both female poverty rate and rate of pregnancies wanted later or unwanted, the abortion regime effects have all decreased in size (relative to Model 1 and Model 2). This decrease in size suggests that the original effects were partially capturing the effect of states' poverty rates on women's mental health. That said, abortion laws retain notable effects, with all the reported regime types reporting higher mental distress rates, on average, relative to expanded states.

Though poverty and pregnancies wanted later or unwanted do matter, it is apparent that state abortion regime does matter and is a political determinant of women's frequent mental distress.

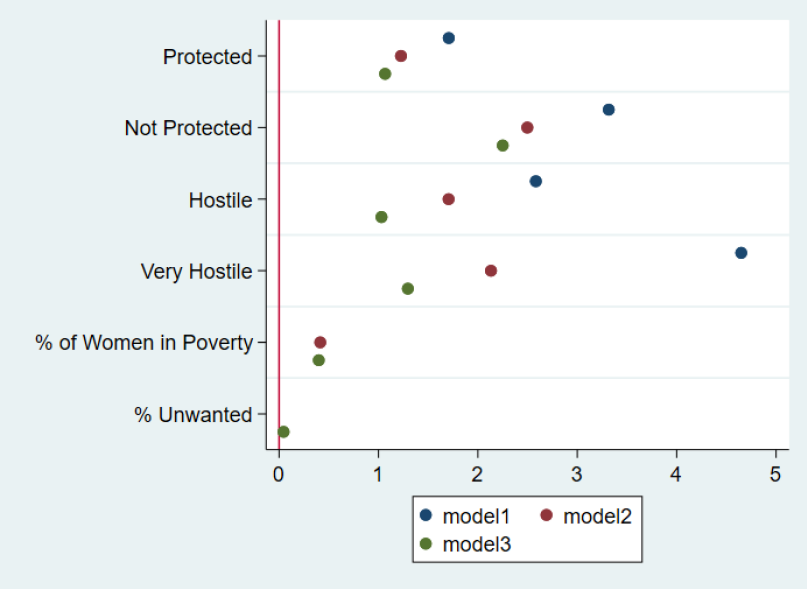

Figure 4. Women's Frequent Mental Distress Regression Coefficients.

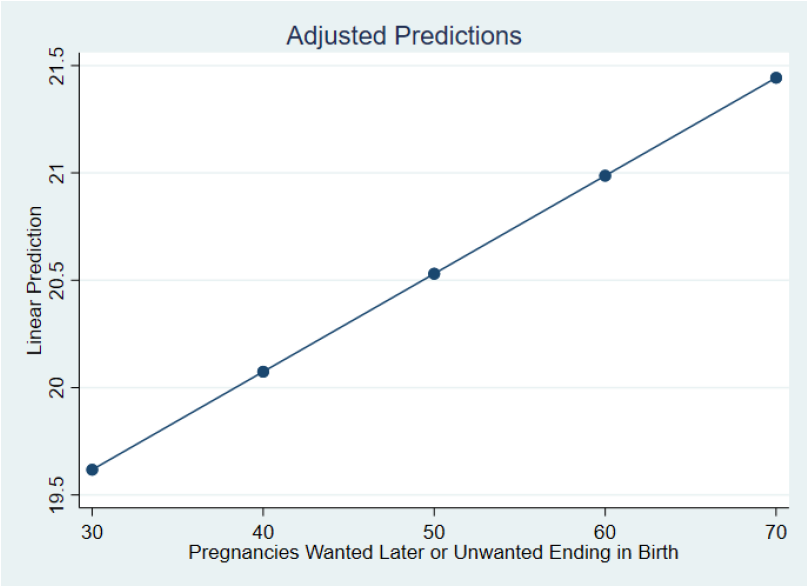

Figure 5. Predicated Values of Mental Distress by Pregnancies Wanted Later or Unwanted.

Figure 4 shows the regression coefficients in Models 1, 2, and 3. There is a clear drop between the Model 1 and Model 2 coefficients when accounting for poverty. Subsequently, there is another drop between the Model 2 and Model 3 coefficients when accounting for pregnancies wanted later or unwanted. With abortion regime effects decreasing in size with each model, female poverty rate and rate of pregnancies wanted later or unwanted ending in birth were accounting for the original effects (relative to Model 1 and Model 2). Figure 5 offers a visualization of the relationship between frequent mental distress and pregnancies wanted later or unwanted. More pregnancies wanted later or unwanted results in more frequent mental distress. This margins plot depicts the margins of frequent mental distress across differential rates of pregnancies wanted later or unwanted ending in birth using Model 3.

Table 3. Results of OLS Regressions Modeling Unwanted Births.

	Model 4
State Abortion Regime (ref: Expanded Access)	
Protected	4.81 (2.86)
Not Protected	5.65 (4.47)
Hostile	15.03 (2.98)
Very Hostile	19.03 (3.65)
% of Women in Poverty	0.21 (0.37)
Constant	39.81 (5.34)
R^2	0.60

N=51

With the rate of unwanted pregnancies partially mediating states' abortion regime impacts on women's mental health, I further explore the relationships among these variables. In Table 3, I report the results of a regression of rate of unwanted births against abortion regime and female poverty rate. Table 3 shows the results from the regression analysis modeling rate of pregnancies wanted later or unwanted ending in birth against state abortion regime while accounting for female poverty rate. There is a clear relationship between state abortion regime and rate of pregnancies wanted later or unwanted. In Protected states, the rate of pregnancies wanted later or unwanted is 4.81 percentage points higher, on average, than in Expanded Access states (the reference group). In Not Protected states, the rate of pregnancies wanted later or unwanted is 5.65 percentage points higher, on average. In Hostile states, the rate of pregnancies wanted later or unwanted is 15.03 percentage points higher, on average. In Very Hostile states, the rate of pregnancies wanted later or unwanted is 19.03 percentage points higher, on average.

DISCUSSION AND CONCLUSIONS

Overall, there is evidence supporting that restrictive abortion policies contribute to higher rates of frequent mental distress among women in the United States. Women living in Not Protected, Hostile, and Very Hostile abortion law regimes experienced more frequent mental distress than women living in Expanded Access or Protected states. That said, poverty and pregnancies unwanted or wanted later in part account for this relationship: poverty is a determinant of women's mental health (Belle 1990); rates of female poverty also often conform

to a states' broader policy environment. This means that there are often higher rates of female poverty in states with abortion law restrictions, as these states often have less of a social safety net (Badger et al. 2022; Treisman 2022). Carrying an unwanted pregnancy to term is also inherently stressful and has a direct impact of restricting access to abortion (Steinberg and Rubin 2014). Despite the influence of poverty and unwanted pregnancies, the findings of this study suggest that a state's abortion regime impacts women's mental health independent of these two variables.

Perceived inequity could be a reason for this (Stein 1997) by means of infringement on bodily autonomy (World Health Organization 2001; World Health Organization 2009). Feminist theory argues the importance of women having control over their own bodies and reproductive capabilities (Petchesky 1980). Modern feminist scholars define self-government or self-direction as being able to act "on motives, reasons or values that are one's *own*" (Stoljar 2018). McLeod (2002) ties women's autonomy to the expression of one's morals. Not being able to exist in a way that aligns with one's beliefs is self-betrayal; conversely, acting autonomously affirms one's moral worth and sense of self (McLeod 2002). The ability to live authentically and make decisions best for oneself may positively impact women's mental health.

Unfortunately, not all women can live life by their own moral code (Oshana 2005). Certain external conditions prevent women from exercising their autonomy (Oshana 2005). Being forced to conform to another's values due to oppression may cause mental distress among women.

One such external condition stripping women of their autonomy is state control and surveillance of reproduction. Following World War 1, motherhood became the state's concern and a public duty imposed on women by the political right (Lennon 2019). That said, the state did not desire motherhood for everyone: it desired motherhood for white women to uphold and preserve whiteness in the U.S. (Lennon 2019; Beisel and Kay 2004). The state's preoccupation with controlling women's reproductive capacities continues. Flavin (2009) argues that laws, courts, law enforcement, and welfare agencies work together to control women's reproduction through "contraception, abortion, pregnancy and child-rearing." Looking into abortion laws specifically, a study conducted by Doan and Schwarz (2020) found that out of 727 anti-abortion measures passed in a state's House of Senate, 622 of them incorporated surveillance and social control mechanisms.

State governments should use these findings to inform not only their abortion policies but their other reproductive and mental health policies. This study demonstrates that restricting abortion impacts women's mental health negatively. In addition, the literature demonstrates that poor mental health leads more often to unplanned pregnancies, spurring further distress. Therefore, states must preserve abortion as a right to prevent worsened health outcomes for women and children.

Limitations and Implications for Future Research

Several limitations exist within this study. For example, frequent mental distress is only one measure of women's mental health. There are other ways to measure mental health and well-being: rates of mental disorders, rates of happiness, suicide rates, etc. Additionally, there are other factors impacting mental health that I did not control for in this study. Though poverty is one of the strongest determinants of mental health, other factors may also be impactful (I initially included race in my regression, but it did not impact the relationship much. This was in line with

the literature on race and mental health). Another limitation was the small sample size of 51. The Not Protected states (New Mexico, New Hampshire, and Virginia) category was particularly interesting, as there were only three states, and they are all very different from one another.

Future research could go in several different directions. Researchers could replicate the study with county-level data or with data from post-*Dobbs*. Future research could also incorporate more measures of women's mental health. Additionally, it would be beneficial for researchers to track changes in rates of frequent mental distress and pregnancies wanted later or unwanted ending in birth in conjunction with changing abortion laws.

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