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Women's Reproductive Rights Policies and Adverse Birth Outcomes: A State-Level Analysis to Assess the Role of Race and Nativity Status

May Sudhinaraset, PhD[1], **Dovile Vilda, PhD**[2], **Jessica Gipson, MPH, PhD**[1], **Marta Bornstein, MPH**[1,3], **Maeve Wallace, MPH, PhD**[2]

[1]Community Health Sciences, Jonathan and Karin Fielding School of Public Health, University of California, Los Angeles, Los Angeles, California

[2]Mary Amelia Douglas-Whited Community Women's Health Education Center, Department of Global Community Health and Behavioral Sciences, Tulane University School of Public Health and Tropical Medicine, New Orleans, Louisiana

[3]California Center for Population Research, University of California, Los Angeles, Los Angeles, California

Abstract

Introduction—Reproductive rights policies can potentially support or inhibit individuals' abilities to attain the highest standard of reproductive and sexual health; however, research is limited on how broader social policies may differentially impact women of color and immigrants in the U.S. This study examines the associations among state-level reproductive rights policies, race, and nativity status with preterm birth and low birth weight in the U.S.

Methods—This was a retrospective, cross-sectional analysis of all births occurring within all 50 states and the District of Columbia using vital statistics birth record data in 2016 (N=3,945,875). Modified Poisson models with generalized estimating equations were fitted to estimate the RR of preterm birth and low birth weight associated with tertiles of the reproductive rights policies index. Analyses were conducted between 2019 and 2020.

Results—Compared with women in states with the most restrictive reproductive rights policies, women living in the least restrictive states had 7% lower low birth weight risk (adjusted RR=0.93, 95% CI=0.88, 0.99). In particular, low birth weight risk was 8% lower among Black women living in the least restrictive states compared with their counterparts living in the most restrictive states (adjusted RR=0.92, 95% CI=0.86, 0.99). Additionally, low birth weight risk was 6% lower among U.S.-born Black women living in the least restrictive states compared with those living in the most

Address correspondence to: May Sudhinaraset, PhD, Community Health Sciences, Jonathan and Karin Fielding School of Public Health, University of California, Los Angeles, 650 Charles E. Young Drive. S., Los Angeles CA 90095. msudhinaraset@ucla.edu.

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restrictive states, but this was marginally significant (adjusted RR=0.94, 95% CI=0.89, 1.00). No other significant associations were found for race–nativity-stratified models.

Conclusions—Women living in states with fewer restrictions related to reproductive rights have lower rates of low birth weight, particularly for Black women.

INTRODUCTION

In 1994, the International Conference on Population and Development recognized the fundamental role of reproductive rights as a core component to health and human development.[1] Reproductive rights policies, in particular, can support or inhibit individuals' ability to decide freely whether and when to have children. In the U.S., restrictive reproductive rights are associated with higher infant mortality rates[2] and increased odds of preterm birth (PTB) and low birth weight (LBW).[3]

Despite the link with adverse health outcomes, reproductive rights policies remain highly debated. In recent years, the number and type of state-level policies that restrict reproductive rights have fluctuated substantially.[4] Although national-level policies (i.e., Roe v. Wade, Affordable Care Act) provide a broad legal framework for reproductive policies, states have substantial discretion in creating policies that may create a more or less restrictive environment generally or for specific populations or services (e.g., provision of Medicaid funding of contraception and abortion services, requiring parental consent for minor to obtain an abortion).

There are multiple complex pathways potentially linking reproductive policies to birth outcomes, including through proximal factors (i.e., reductions in unintended pregnancies resulting in birth) and more distal factors (i.e., as a marker of women's status). First, policies impact the ability—especially for disadvantaged groups (e.g., immigrant and low-income women)—to access needed reproductive health services, causing delays in obtaining care, or not being able to obtain needed services at all.[5] Policies such as comprehensive sex education, contraceptive coverage mandates, and Medicaid family planning expansion programs increase effective contraceptive use.[6,7] Challenges in accessing contraception result in higher levels of unintended pregnancies,[8–10] which are associated with LBW[11,12] and PTB.[13,14] Earlier studies using data from pre-2000 assessing Medicaid funding restrictions and parental involvement laws find reductions in the number of abortions, with no or negative effects on birth.[15–17] More recent studies, however, suggest that restrictive policies result in an increase in birth rates and decrease in abortion rates.[9,18] For example, a study using 2000–2005 data found that Medicaid funding restrictions were associated with higher rates of unwanted birth among Black teens in particular.[9] Alternatively, policies that improved access to family planning services were associated with lower risk of PTB.[19] Potential mechanisms linking unintended pregnancies and adverse birth outcomes include risk behaviors before pregnancy (i.e., smoking), more stress, less social support, and lower SES.[20]

Restrictive reproductive policies also potentially have more distal impacts on adverse birth outcomes when viewed as a marker of women's status. Increased women's status (e.g., civic participation, economic opportunity, and reproductive autonomy) has been shown to lower

the incidence of adult mortality and morbidity rates,[21] infant mortality,[2] and teenage birth rate.[2] A substantial literature links gender equity to improved population health outcomes.[22,23] Women's empowerment, in particular, may improve birth outcomes by preventing early marriage and promoting family planning, improving women's nutritional status, reducing domestic violence and stressors related to psychological health, and increased utilization of healthcare during pregnancy and delivery.[24] Women's status may indirectly influence adverse birth outcomes through stress-related pathways. Some research finds that lower women's status is associated with mood and anxiety disorders[25] and depressive symptoms,[26] which are known risk factors for PTB.[27]

The impact of reproductive policies on women of color, who may experience lower status across the life course relative to men and to their White peers, has not been adequately studied.[28] In the U.S., unacceptably high levels of racial and ethnic disparities in infant mortality and adverse birth outcomes exist. Black women have the highest rates of PTB, LBW, and infant mortality at 11.4 deaths per 1,000 live births, more than twice the rate of non-Hispanic Whites (4.9 deaths per 1,000 live births). Although Hispanic/Latina and Asians and Pacific Islanders have rates of PTB and LBW that are similar to non-Hispanic Whites,[29,30] examination of birth outcomes solely by broad racial/ethnic groupings in the U.S. masks important differences in adverse birth outcomes within racial/ethnic groups. Despite lower SES, foreign-born women have better perinatal outcomes compared with U.S.-born women of the same race/ethnicity.[31] This is widely known as the "epidemiological paradox."[32] Debate continues, however, surrounding the generalizability of this phenomena including mixed results across heterogeneous groups of Asian ethnicities[33] and a lack of assessment of nativity status within racial/ethnic groups.[34] From 2007 to 2016, the prevalence of PTB increased by 2% among foreign-born women and declined 11.5% among U.S.-born women,[35] with similar trends for LBW.[36]

Studies have attempted to disentangle causes of disparities in adverse birth outcomes, with most focusing on individual-level factors.[37,38] However, advancements in the field highlight the importance of the historical and social context in explaining these disparities.[38] Specifically, structural racism, or the ways in which historically and culturally linked social forces reinforce racial inequities through discriminatory practices and unequal distribution of resources, such as wealth and housing, may be an important factor in producing reproductive disadvantage.[39] Reproductive disadvantage, in turn, is the result of structural racism via the stress-induced physiological pathways linking racism and discrimination to poor health outcomes.[38] Examples of structural racism include social segregation, exclusionary immigration policies, and intergenerational trauma, all which negatively impact health outcomes.[40] Reproductive rights policies, specifically, have differentially discriminated against Black women and communities of color, including practices of involuntary and nonconsensual sterilization of non-White women, degrading notions of Black motherhood, and present-day targeting of contraceptive technologies to Black women.[41–43] This has resulted in infringements to reproductive autonomy and high levels of mistrust of the healthcare system.[44] Studies find that increased exposure to structural racism results in higher levels of infant mortality rates[45] and fetal growth restriction.[46] Given recent federal and state changes in reproductive rights policies and increasing anti-immigrant sentiments in

the U.S., women of color and immigrant women may be differentially impacted by restrictive policies.

This study examines how state-level differences in measures of reproductive rights policies collectively predict the risk of PTB and LBW, and how these associations may vary by race/ethnicity and nativity status. The study examines policy data from 2015. Between 2014 and 2015, the greatest increase in number of state-level reproductive restrictions were enacted since 2011.[47] This study tests a set of overall policies, rather than assessing singular policies, given that children's health outcomes are more likely to reflect the cumulative experience of policies in a place at a given time,[48] particularly among disadvantaged groups.[49,50] This study hypothesizes that women living in states with less restrictive reproductive rights have lower rates of adverse birth outcomes compared with women living in states with higher levels of restrictive reproductive rights. It is expected that race and nativity modifies this relationship, such that Black women as well as foreign-born women living in less restrictive states have protective effects compared with Black and foreign-born women living in more restrictive states.

METHODS

Study Sample

This study was a retrospective, cross-sectional analysis of all births occurring within all 50 states and the District of Columbia in 2016 (N=3,945,875). Vital statistics birth record data were obtained from the National Center for Health Statistics. The primary outcomes of interest were PTB (i.e., birth before 37 completed weeks of gestation) and LBW (i.e., a birth weight <2,500 g regardless of gestational age).

Measures

The reproductive rights composite index is based on 6 indicators, with a score assigned to each indicator (i.e., 0–1) based on the Institute for Women's Policy Research methodology.[51] This study constructed the score using data routinely collected by the Guttmacher Institute. All data were recorded in 2015[52]; the exception is the percentage of women living in counties with abortion providers, which was recorded in 2014. This index describes the reproductive rights policy climate for each state in the year prior to when women gave birth (i.e., preconception year).[51] The indicators include: (1) mandatory parental consent for minors seeking abortion, (2) mandatory waiting periods for abortion services, (3) restrictions on public funding for abortion, (4) the percentage of women living in counties with abortion providers, (5) expanded eligibility for Medicaid family planning services, and (6) mandatory sex education in schools. States received a 0 if a restrictive policy existed (i.e., mandatory parental consent) and 1 if the restrictive policy did not exist (i.e., consent was not required). Alternatively, states received a 1 if promoting policies existed (i.e., mandatory sex education required) and 0 if promoting policies did not exist (i.e., did not require mandatory sex education). Per the Institute for Women's Policy Research guidelines, weights were based on the degree of restrictive reproductive rights: Parental consent and mandatory waiting period indicators were weighted 0.5, and other indicators were weighted 1.0. Weighted indicators were then summed to provide a total composite index. The index was then divided into

tertiles, categorizing the states as having the least restrictive, moderately restrictive, or most restrictive reproductive rights.

Adjusted models controlled for individual- and state-level covariates. Birth records included data on maternal race (non-Hispanic White, non-Hispanic Black, non-Hispanic Native American Indian, non-Hispanic Asian, Native Hawaiian and Pacific Islanders, non-Hispanic more than 1 race, and Hispanic), nativity status (foreign-born versus U.S.-born), age, education, smoked at any stage during pregnancy (yes/no), and insurance type (public [Medicaid], private, and self-pay/other). Hereafter, non-Hispanic Black is referred to as "Black" and non-Hispanic White as "White." State-level variables were obtained from the American Community Survey of the U.S. Census Bureau and Centers for Medicare and Medicaid Services, and included state-level unemployment rate in 2015, percentage foreign-born population, percentage Republican voters in 2012, public expenditure on health in 2015 (in 1,000s), and state Medicaid expansion status. Additionally, the study controlled for state-level immigration policies in 2015, including provision of children's health insurance regardless of legal status, and whether a state fully collaborates with federal immigration authorities.[53,54] The study also controlled for a measure of women's status by including the 2015 Poverty and Opportunity Index provided by the Institute for Women's Policy Research, which combines 4 components of women's economic security, such as business ownership and poverty rate.[51] This study used de-identified data and was exempt from the ethics review process.

Statistical Analysis

Descriptive analyses were performed to compare characteristics of women, birth outcomes, and states across tertiles of the reproductive rights composite index. Modified log-Poisson regression models with generalized estimating equations estimated the RR of PTB and LBW among women in states where rights were less restrictive (middle and high tertiles of composite index) compared with women in states where rights were most restrictive with clustering by state. Each of the fitted models included the individual- and state-level covariates. Effect modification was identified by first fitting fully adjusted models with interaction terms between race/ethnicity and nativity status. Nativity-stratified models assessed the potential effect modification of race/nativity on the association between reproductive rights policies and adverse birth outcomes. Results from stratified models are only presented if interaction terms were significant or marginally significant ($p \leq 0.1$). Crude percentages of LBW and PTB by race and nativity status are included in Appendix Table 1. All statistical analyses were performed using SAS, version 9.4. Analyses were conducted between 2019 and 2020.

RESULTS

Characteristics of birth outcomes and individual- and state-level covariates across tertiles of the reproductive rights composite index are summarized in Table 1. Across states, the reproductive rights index ranged from 0.23 to 4.70; cut points for tertiles were 1.37 and 3.08. The cluster of states with the least restrictive reproductive rights policies had the lowest rates

of PTB (8.9%) and LBW (7.4%) as compared with the most and moderately restrictive states (Table 1).

Women living in states with the least restrictive reproductive rights policies had 7% lower risk of LBW (adjusted RR [ARR]=0.93, 95% CI=0.88, 0.99) compared with women in the most restrictive states, after adjusting for individual- and state-level characteristics (Table 2). PTB risk did not significantly differ between least and most restrictive states (ARR=0.97, 95% CI=0.90, 1.05).

Fully adjusted interaction models by race/ethnicity showed statistically significant differences for Black women versus all other women ($p<0.01$). Results from race-stratified models showed that Black women living in states with the least restrictive reproductive rights policies had 8% lower risk of LBW as compared with Black women in the most restrictive states (ARR=0.92, 95% CI=0.86, 0.99) (Table 3). Fully adjusted interaction models by nativity showed that there were marginal differences for Black U.S.-born versus foreign-born women ($p=0.10$). In Black nativity-stratified models, U.S.-born Black women living in the least restrictive states had 6% lower LBW risk than U.S.-born Black women in the most restrictive states (ARR=0.94, 95% CI=0.89, 1.00) (Table 3). No other significant associations were found for race–nativity-stratified models.

DISCUSSION

Despite increasing restrictions on reproductive rights in recent years, there are remarkably few empirical studies assessing the association between state-level restrictive reproductive policies and adverse birth outcomes by nativity status and race/ethnicity. This study aligns with other research that has found that women living in less restrictive versus more restrictive states have better birth outcomes.[2,3] Moreover, this study found that less restrictive policy environments were particularly protective for Black women, with evidence that this may be particularly true for U.S.-born Black women.

These findings provide evidence for important policy levers that could be implemented to improve women's reproductive health generally, with particular benefits for U.S.-born Black women, such as increasing abortion access and mandatory sex education in schools. The U.S. has a long history of oppressive reproductive policies and ideologies that results in the devaluation of certain lives, mainly racial/ethnic minorities. Past examples include the passage of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and the racist stereotypes of Black mothers as "welfare queens" to control reproduction,[55] the eugenics movement, and the country's history of involuntary and nonconsensual sterilization, particularly among immigrant, Black, and incarcerated women.[56] Moreover, new contraceptive technologies have been targeted to Black women[41] and several states have introduced legislation to restrict sex- and race-selective abortion policies, which are devoid of scientific justification and only serve to propagate stereotypes targeting Asian, Latina, and Black women and to restrict reproductive rights.[57]

There were no significant associations for foreign-born women. This suggests that other factors beyond nativity status may explain the association between reproductive rights and

birth outcomes, such as documentation status, length of time in the U.S., social support networks, and broader policy climates. Undocumented women may be systematically excluded from public benefits altogether, while those living in mixed status families may experience spillover/chilling effects due to social proximity with targeted individuals.[5] Moreover, recent immigrants are more likely to experience a "health advantage" in regard to birth outcomes,[31] whereas others have found that broader restrictive immigration policies increase adverse birth outcomes among Latinas.[58] Corroborating previous literature, this study also found that the extent to which states collaborate with federal immigration authorities was associated with higher rates of LBW.

When considered jointly, both race/ethnicity and nativity played a role in shaping risk for adverse birth outcomes associated with the state's reproductive rights climate. That is, the findings showed significant associations between LBW and states' reproductive rights climate among U.S.-born but not foreign-born Black women. This finding is in line with the growing literature on the context-dependent nature of race as a determinant of population health.[40,45,46,59] It may be that U.S.-born black women's reproductive health is shaped by the accumulation of insults to health accrued over their lifetime (and even over generations before them) living within a systematically racist society. Foreign-born women, on the other hand, may have had less time exposed to the historical and contemporary features of structural racism that restrict access to health-promoting resources and opportunities among people of color in the U.S. It should be noted, however, that fully adjusted interaction models and stratified models showed marginal significance, and therefore these results may be due to chance. However, these significant findings persisted in models run with different combinations of covariates (i.e., state-level poverty instead of poverty and opportunity index), for U.S.-born black women. Future studies should explore this finding further, including qualitative studies to further examine the lived experiences of Black women.

Limitations

There are a number of limitations to highlight, as well as directions for future research. First, this study uses cross-sectional data and does not allow assessment of the implementation of policies and subsequent impact on health outcomes. Future studies should consider how policies change across time, using specific dates that lawmakers introduce and pass bills, given that the introduction of new or changing policies may lead to confusion and fear.[60] Second, although this study uses an existing measure of reproductive rights, it is limited in the focus on family planning and abortion. Future work is warranted on developing measures that are reflective of the broader political climate in regard to reproductive rights and experiences of different populations (i.e., sexual/gender minorities, immigrants) as well as measures that use a life course perspective,[61] particularly given the interest in improving birth outcomes. Measures such as paid family leave, employment accommodations for pregnancy, and other indicators that encapsulate women's reproductive trajectory across her life course may be more robust for different populations. Third, the study includes a number of state- and individual-level characteristics in order to control for differences that might explain the observed associations, but the authors cannot rule out the possibility of unmeasured confounding or the possibility of findings being due to chance given the large number of comparisons. Additionally, the authors recognize that broad race categories are

limited. For example, Southeast Asians and Pacific Islanders typically report higher levels of adverse birth outcomes and maternal morbidity compared with those from East Asia.[62] This study is also unable to capture documentation status or length of time in the U.S. Lastly, it should be noted that there were significant findings for LBW, but not PTB. Future studies may assess whether there are different mechanisms at play across these 2 outcomes, given how closely related they are.

CONCLUSIONS

Reproductive rights policies play a critical role in advancing maternal and child health outcomes. Future studies should assess specific evidence-based policies, particularly highlighting women's lived experiences of policy exclusion or inclusion, and the effects on women and newborn health.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Characteristics of Births by Tertile of State-level Reproductive Rights Index

Characteristics	Most restrictive policies (20 states) (N=1,449,023)	Moderately restrictive policies (15 states) (N=1,199,047)	Least restrictive policies (16 states) (N=1,297,805)
States	AL, AR, CO, ID, IN, KS, KY, LA, MO, NE, ND, OK, PA, SD, TN, TX, UT, VA, WI, WY	AK, AZ, DE, FL, GA, IL, ME, MA, MI, MS, NH, NC, OH, SC, WV	CA, CT, DC, HI, IA, MD, MN, MT, NV, NJ, NM, NY, OR, RI, VT, WA
PTB, %	10.2	10.3	8.9
LBW, %	8.4	8.7	7.4
Maternal race/ethnicity, %			
Non-Hispanic Asian	3.9	4.2	11.6
Non-Hispanic Black	13.6	19.9	9.8
Hispanic	21.5	17.5	31.4
Non-Hispanic White	58.0	55.7	43.5
More than one race/other	3.0	2.7	3.7
Maternal nativity, %			
U.S.-born	82.9	80.9	68.2
Foreign born	17.1	19.1	31.8
Maternal age, years, %			
<19	6.3	5.6	4.1
20−24	22.8	21.2	16.9
25−29	30.3	29.5	27.5
30−34	26.4	27.6	30.6
35−39	11.8	13.2	16.8
40−45	2.3	2.7	3.8
≥45	0.2	0.2	0.3
Maternal education, %			
Less than high school	14.4	13.0	13.9
High school graduate or GED	26.2	25.9	23.2
Some college, Associate's or BA degree	49.2	49.6	48.7
Graduate degree or higher Insurance, %	10.1	11.5	14.2
Public	42.0	44.1	41.9
Private	49.1	48.3	50.73
Self-pay/Other	8.9	7.6	7.4
Smoking during pregnancy, %	8.7	8.3	4.5
Percent foreign-born, M (SD)	9.1 (5.2)	10.9 (5.8)	20.3 (7.2)
Percent Republican voters, M (SD)	55.9 (6.7)	48.3 (5.2)	38.3 (4.8)
Percent unemployed, M (SD)	4.0 (0.5)	4.9 (0.4)	4.8 (0.7)
Medicaid expanded, N (%)	5.0 (20.0)	7.0 (46.7)	16.0 (100.0)
Children's health insurance regardless of immigration status, N (%)	0.0 (0.0)	2.0 (13.3)	4.0 (25.0)
States collaborating with federal immigration authorities, N (%)	1.0 (5.0)	0.0 (0.0)	3.0 (18.8)

Characteristics	Most restrictive policies (20 states) (N=1,449,023)	Moderately restrictive policies (15 states) (N=1,199,047)	Least restrictive policies (16 states) (N=1,297,805)
Public expenditure on health, M (SD)	7,631.0 (799.3)	8,095.6 (1,096.4)	8,346.9 (984.3)
Gender poverty and opportunity index, M (SD)	6.84 (0.3)	6.92 (0.3)	7.18 (0.3)

PTB, preterm birth; LBW, low birth weight.

Table 2.

Associations Between PTB and LBW and State-Level Reproductive Rights Index Tertiles, Total Sample

	PTB (n=3,699,229)	LBW (n=3,697,728)
Variable	**ARR (95% CI)**	**ARR (95% CI)**
Reproductive rights index tertile		
Most restrictive	ref	ref
Moderately restrictive	0.99 (0.94, 1.04)	0.99 (0.95, 1.02)
Least restrictive	0.97 (0.90, 1.05)	**0.93** * (0.88, 0.99)
Maternal race/ethnicity		
Non-Hispanic Asian	ref	ref
Non-Hispanic Black	**1.19** ** (1.15, 1.23)	**1.56** ** (1.49, 1.64)
Hispanic	**1.52** ** (1.49, 1.55)	**1.95** ** (1.92, 1.99)
Non-Hispanic White	**1.15** ** (1.12, 1.20)	**1.16** ** (1.12, 1.19)
More than one race/Other	**1.17** ** (1.11, 1.23)	**1.25** ** (1.20, 1.30)
Maternal nativity		
U.S.-born	ref	ref
Foreign born	**0.80** ** (0.77, 0.84)	**0.81** ** (0.78, 0.85)
Maternal age, years		
<19	ref	ref
20−24	**0.98** * (0.96, 1.00)	**0.91** ** (0.89, 0.93)
25−29	**1.04** ** (1.01, 1.07)	**0.91** ** (0.88, 0.93)
30−34	**1.17** ** (1.14, 1.21)	0.99 (0.96, 1.01)
35−39	**1.42** ** (1.37, 1.47)	**1.17** ** (1.14, 1.20)
40−45	**1.76** ** (1.68, 1.84)	**1.45** ** (1.39, 1.51)
≥45	**2.99** ** (2.75, 3.25)	**2.56** ** (2.36, 2.77)
Maternal education		
Graduate degree or higher	ref	ref
Less than high school	**1.25** ** (1.22, 1.28)	**1.20** ** (1.17, 1.23)
High school graduate or GED	**1.18** ** (1.16, 1.20)	**1.14** ** (1.11, 1.17)
Some college, Associate's or BA degree	**1.08** ** (1.07, 1.10)	**1.04** ** (1.02, 1.05)
Insurance		
Private	ref	ref
Public	**1.08** ** (1.05, 1.10)	**1.10** ** (1.08, 1.13)
Self-pay/Other	0.97 (0.93, 1.00)	0.98 (0.94, 1.03)
Smoking during pregnancy		
No	ref	ref
Yes	**1.33** ** (1.30, 1.37)	**1.73** ** (1.69, 1.77)
Medicaid expansion status		
Yes	ref	ref

	PTB (n=3,699,229)	LBW (n=3,697,728)
Variable	**ARR (95% CI)**	**ARR (95% CI)**
No	1.03 (0.99, 1.08)	1.01 (0.98, 1.05)
Children's health insurance regardless of immigration status		
Yes	ref	ref
No	1.03 (0.96, 1.11)	1.05 (0.99, 1.11)
State collaboration with federal immigration authorities		
No	ref	ref
Yes	1.00 (0.93, 1.07)	**1.20** ** (1.09, 1.31)
% Foreign-born	0.82 (0.59, 1.13)	1.11 (0.85, 1.44)
% Republican voters	1.42 (0.90, 2.25)	1.34 (0.81, 2.23)
% Unemployed	**1.49** * (1.10, 2.05)	**1.54** * (1.12, 2.12)
Public expenditure on health	0.89 (0.69, 1.10)	0.99 (0.59, 1.66)
Gender poverty and opportunity index	0.96 (0.90, 1.03)	0.97 (0.91, 1.04)

Note: Boldface indicates statistical significance (*p<0.05; **p<0.01).

PTB, preterm birth; LBW, low birth weight.

Table 3.

Associations Between PTB and LBW and State-Level Reproductive Rights Index Tertiles Among Black Women, Total and by Nativity Status[a]

	PTB	LBW
Variable	**ARR (95% CI)**	**ARR (95% CI)**
Non-Hispanic Black total population (N=517,167)		
Most restrictive	ref	ref
Moderately restrictive	0.99 (0.93, 1.05)	0.99 (0.95, 1.04)
Least restrictive	0.95 (0.85, 1.05)	**0.92** * (0.86, 0.99)
U.S.-born Black (N=430,508)		
Most restrictive	ref	ref
Moderately restrictive	1.00 (0.94, 1.06)	1.00 (0.96, 1.04)
Least restrictive	0.97 (0.87, 1.07)	**0.94** * (0.89, 1.00)
Foreign-born Black (N=86,659)		
Most restrictive	ref	ref
Moderately restrictive	1.00 (0.94, 1.06)	1.06 (0.96, 1.17)
Least restrictive	0.97 (0.87, 1.07)	0.96 (0.83, 1.12)

Note: Boldface indicates statistical significance (*p<0.05; **p<0.01).

[a]Models stratified by race/ethnicity were adjusted for maternal age, nativity status, education level, insurance status, smoking during pregnancy, state-level percentage foreign-born, state-level percentage Republicans, state-level percentage unemployment; Medicaid expansion status; children's health insurance regardless of legal status; whether the state fully collaborates with federal immigration authorities; public expenditure on health; and state gender poverty and opportunity score.

PTB, preterm birth; LBW, low birth weight.