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Original Research Article

# Differences in abortion rates by race–ethnicity after implementation of a restrictive Texas law ♠,♠♠,★

Vinita Goval\*, Isabel H. McLoughlin Brooks, Daniel A. Powers

Population Research Center, University of Texas at Austin, 305 E. 23rd St, Stop G1800, Austin, TX 78712, United States

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#### ABSTRACT

Objective: To evaluate the association between a restrictive Texas law, House Bill 2 (HB2), and receipt of in-clinic abortion by patient's race-ethnicity.

Study design: In this retrospective cohort study, we collected Texas state statistics on number of abortions, abortions per county, and abortions per county by race–ethnicity for 2012, before HB2 was enacted, and 2015, after HB2 was in effect. Using female reproductive-aged population estimates, we calculated the abortion rate and percent change in the abortion rate between the two time periods by county, patient residence in a county with an open clinic or HB2-related clinic closure, and change in distance to an open clinic for each race–ethnicity. We also used geospatial analyses to depict the greatest decrease in abortion rate by race–ethnicity and county.

Results: In Texas, there were 64,716 reported abortions in 2012 and 54,253 in 2015. Statewide, there was a 20% decrease in the abortion rate affecting all racial-ethnic groups, yet the reduction was greater among Hispanic women compared to White women (-25% vs. -16%, respectively). The abortion rate also decreased more among those living in a county with an HB2-related clinic closure, especially for Hispanic women (-41% Hispanic vs. -29% White vs. -30% Black vs. -3% Other). Hispanic women whose travel distance increased 100+ miles had the greatest reduction in the abortion rate (-43%). Geospatial mapping confirmed our quantitative findings.

*Conclusion:* HB2 led to a disproportionate reduction in the abortion rate among Hispanic women in Texas, including those living in counties with a closed clinic or traveling long distances to obtain inclinic abortion care.

*Implications*: Restrictive abortion policies in Texas may disproportionately burden Hispanic women and those affected by clinic closures.

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#### 1. Introduction

The Texas legislature passed a restrictive abortion law, House Bill 2 (HB2), in July 2013 which had four components: (1) medication abortion restrictions, (2) imposition of a 20 week post-

E-mail address: vinitagoyalmd@gmail.com (V. Goyal).

https://doi.org/10.1016/j.contraception.2020.04.008 0010-7824/© 2020 Elsevier Inc. All rights reserved. conception abortion ban, (3) physician admitting privilege requirements, and (4) ambulatory surgery center facility requirements. The latter two components led to the closure of many of the state's 41 clinics, leaving only 19 [1]. The remaining abortion clinics were concentrated within major metropolitan cities in the central and eastern part of Texas, while clinics in west Texas and Gulf Coast counties closed. As a result, nearly 300,000 reproductive-aged women living in Texas would have to drive greater than 200 miles to obtain in-clinic abortion care [2].

Nationally, the abortion rate is higher for non-White compared to White women [3,4]. While the abortion rate is decreasing for all racial-ethnic groups, the most recent data indicate that Black, non-Hispanic (27.1 abortions/1000 women aged 15–44), Hispanic (18.1/1000), and those classified as Other, non-Hispanic (16.3/1000) have a higher abortion rate compared to White, non-Hispanic women (10/1000) [4]. Systemic inequalities in health care access, insurance coverage, as well as economic and social

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<sup>\*</sup> Corresponding author.

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hardships contribute to racial-ethnic disparities in the abortion rate [3,4].

Similar to the national landscape, Black and Hispanic women in Texas are disproportionately burdened with limited access to healthcare, higher likelihood of being uninsured, and financial insecurity compared to White women [5,6]. As such, opponents of HB2 theorized that the demand for abortion services would be higher and the harmful effects of HB2 would be greater among Black and Hispanic women in Texas compared to their White counterparts [5,6]. However, few studies have evaluated the impact of this law on Black and Hispanic women. Our objective was to evaluate the abortion rate by racial-ethnic group among patients receiving in-clinic abortion care in Texas before and after HB2 went into effect. We additionally evaluated how residence in a county with an open clinic and distance from an available clinic changed the abortion rate by racial-ethnic group.

#### 2. Materials and methods

We conducted a retrospective cohort study using Texas state vital statistics to examine reported abortions by patient race–ethnicity and county of residence for one year (2012) prior to enactment of HB2 in 2013 and one year after (2015) the law was in effect. Given the flux in Texas abortion facility services resulting from a rapidly evolving legal climate, we did not collect data for the year immediately following passage of HB2, but instead in a year when the number and location of open abortion clinics was stable.

#### 2.1. Data sources

Abortion providers in Texas are mandated to report details of each abortion procedure provided within their facility to the Texas Department of State Health Services (DSHS) via the Induced Abortion Report Form including the patient's county of residence and race–ethnicity [7]. De-identified data on the total number of abortions, abortions per patient county of residence, and abortions per patient county of residence by race–ethnicity are publicly available for 2012 and 2015 on the Texas DSHS website [8,9]. We included only reported abortion cases among Texas residents in our analyses. Self-managed abortions were not reported to the state, so we did not include these in our analyses.

We used Texas Demographic Center data from 2012 and 2015 to calculate the number of reproductive age women (15–44 years of age) in each county for each race–ethnicity category in the two time periods [8].

#### 2.2. Statistical analyses

We categorized race–ethnicity according to that reported in Texas state vital statistics which was White, Black, Hispanic, and Other including Native American and Asian. The Texas DSHS Induced Abortion Report Form allowed the selection of only one race or ethnicity option thus precluding a more complete reporting of a patient's racial and ethnic identities.

To evaluate the impact of clinic availability on the abortion rate, we classified Texas counties as those with a clinic that remained open in 2015, those in which a clinic closed as a result of the law, and those that had no clinic before and after HB2 went into effect.

Additionally, we evaluated the effect of clinic distance on the abortion rate. We calculated the distance between the centroid for each county and the centroid of the nearest Texas city with an open clinic in the two time periods. We then calculated the dif-

ference in distance and categorized this as 0 (no difference), 1–24, 25–49, 50–99, or 100+ miles from the nearest city with a clinic.

We calculated reported abortion cases and reproductive-aged population totals in each county for every combination of race-ethnicity, year, county clinic availability, and change in distance to open clinic variables. We used Poisson regression models to obtain the overall abortion rate for each category by year. We then computed percent change estimates with 95% confidence limits using a post-estimation nonlinear transformation utility (nlcom) in Stata version 15. We presented the overall race-ethnicity by year results as well as race-ethnicity by year and clinic availability and race-ethnicity by year and distance to clinic data.

Finally, we created a choropleth map and shaded Texas counties in proportion to the percent decrease in the abortion rate per county between the two time periods using ArcGIS version 10.6. Overlaying these maps, we labeled the cities in which there was an open abortion clinic or HB2-related clinic closure. Similarly, we created maps to depict the counties with the greatest percent decrease in the abortion rate between 2012 and 2015 by racial-ethnic background using a gradient scale.

We submitted our study protocol to The University of Texas at Austin Institutional Review Board which determined that a review was not necessary as our secondary use of de-identified datasets did not meet the criteria for human subjects research.

#### 3. Results

#### 3.1. Statewide

In 2012, 66,098 abortion cases were reported to the state, of which 64,716 were among Texas residents. In 2015, 54,310 abortion cases were reported to the state, of which 54,253 were among Texas residents. Overall, reported abortion cases decreased by 16% statewide with a corresponding 20% decrease in the abortion rate between the two time periods (Table 1). Geospatial chloropleth mapping demonstrated that the abortion rate decreased most in 16 west Texas counties, particularly in those surrounding cities with an HB2-related clinic closure (Fig. 1, Panel A).

#### 3.2. Results by race-ethnicity

Reported abortions decreased among all racial-ethnic groups in Texas. In 2012, the abortion rate was highest for Black, followed by Other, Hispanic and then White women. This pattern persisted in 2015, albeit at a reduced abortion rate for all racial-ethnic groups. Yet, the percent decrease in the abortion rate was greatest for Hispanic women. Statewide, there was approximately a 25% reduction in the abortion rate among Hispanic women compared to the 16% decline seen among White women (Table 1).

Additionally, geospatial mapping demonstrated that over 50 Texas counties had a 75–100% reduction in the abortion rate for Hispanic women. Afflicted counties were spread across the state, but were primarily concentrated in west Texas (Fig. 1, Panel B).

#### 3.3. Results by race-ethnicity and clinic availability

In 2015, there were seven Texas counties in which an abortion clinic providing care in 2012 remained open. Nine counties incurred an HB2-related clinic closure and 238 counties had no clinic in either time period. The greatest reduction in the abortion rate occurred in counties that incurred a clinic closure. Among counties in which a clinic remained open, there was a 21% reduction in abortion cases compared to a 34% reduction in counties that had a clinic closure. Similarly, the reduction in the abortion rate was greater among White, Black, and Hispanic women living in

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**Table 1**Reported number of abortion cases, population of reproductive aged women (15–44), abortion rate, and percent change in abortion rate overall and by race–ethnicity in 2012 and 2015 in Texas.

	Reported abortion cases	Reproductive-aged population	Abortion rate*	Percent change
Overall				
2012	64,716	5,464,147	11.84	
2015	54,253	5,736,537	9.46	-20.15
White				
2012	19,446	2,136,013	9.10	
2015	15,869	2,080,672	7.63	-16.22
Black				
2012	16,208	683,195	23.72	
2015	14,134	715,063	19.77	-16.68
Hispanic				
2012	24,520	2,291,500	10.70	
2015	20,219	2,527,715	8.00	-25.25
Other				
2012	4542	353,439	12.85	
2015	4031	413,087	9.76	-24.07

Reported abortion cases/1000 women of reproductive age.

counties with a closed compared to an open clinic. Yet, this reduction was greatest for Hispanic women. Additionally, Hispanic women living in a county that had no clinic in either time period had the greatest reduction in the abortion rate compared to those from other racial-ethnic groups (Table 2).

#### 3.4. Results by race-ethnicity and clinic distance

In 2015, 98 Texas counties had no change in distance to the nearest clinic including those in which a clinic remained open. Residents from 23 counties had to drive an additional 1–24 miles to the nearest abortion clinic in 2015 compared to 2012. The driving distance increased by 25–49 miles for residents from 24 counties, by 50–99 miles for 41 counties, and by 100+ miles for 68 counties.

Between 2012 and 2015, the abortion rate progressively decreased as distance to the nearest clinic increased from 1–24 miles to 50–99 miles (17% reduction at 1–24 miles increased distance, 19% reduction at 25–49 miles, 34% reduction at 50–99 miles). Among those living in counties where distance to the nearest clinic increased by 100+ miles, the abortion rate decreased 24%.

This pattern of a decrease in the abortion rate as distance increased from 1 to 99 miles was evident for both White and Hispanic women. While White women traveling greater than 100 miles had a less steep reduction in the abortion rate, the percent decrease in abortion rate was greatest for Hispanic women who had to travel greater than 100 miles to obtain care (10% reduction for White women vs. 43% reduction for Hispanic women), (Table 3).

#### 4. Discussion

Texas legislative abortion restrictions enacted in 2013 led to a statewide decrease in reported abortions among women of all racial-ethnic groups, but resulted in a disproportionate decrease in the abortion rate among Hispanic women. Specifically, Hispanic women living in Texas counties with an HB2-related clinic closure and those having to travel greater than 100+ miles for care had the greatest reduction in the abortion rate after the law went into effect compared to their racial-ethnic counterparts.

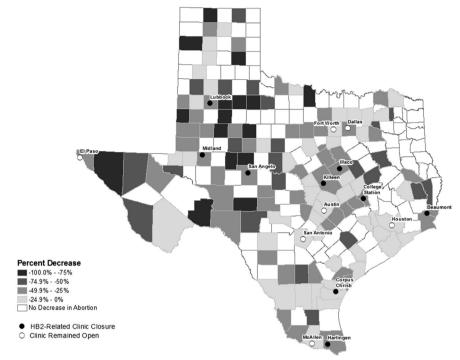
Several studies have examined the impact of Texas' restrictive abortion law. A study evaluating the abortion rate in the first six months after this law went into effect found a 13% decrease in cases reported by abortion facilities [2]. Our result of a 16% state-

wide decrease in abortion cases takes into account all abortions reported to the state comparing two full years. Similar to our results, the percent decrease in abortions between 2012 and 2014 increased as change in distance to an open clinic increased [10]. Unlike that study, we found a lower reduction in the abortion rate among women whose change in travel distance was 100+miles. This discrepancy may indicate that after an initial period of confusion about the availability of abortion services in Texas [11], women living greater than 100 miles from a clinic did seek abortion services at a greater rate in 2015 compared to 2014, but still at a reduced rate compared to before HB2 went into effect. Additional studies have documented the difficulty women seeking abortion in Texas have had in overcoming financial and logistical barriers to obtain care [1.11.12].

Few studies have evaluated the effect of this law by racialethnic group. One study found that the association between increasing distance beyond 100 miles to an abortion clinic and decreasing abortion rates primarily held true for White and Black patients [13]. Another study found that Black women in Texas were more likely to obtain second trimester abortion, an indicator of limited access to care, after HB2 went into effect [14]. Our study adds to the existing literature by specifically examining how this law affected the abortion rate for each racial-ethnic group accounting for availability and distance to an open clinic.

Our results provide significant evidence to support the prevailing hypothesis that this restrictive abortion law would be disproportionately detrimental to non-White women [15]. Yet, there are some limitations in our quantitative assessment. First, the racial-ethnic background for each patient seeking abortion care may have been misclassified. The Texas state Induced Abortion Report Form precluded classification of both the patient's race and ethnicity. Additionally, it is possible that patient race-ethnicity was not coded correctly by clinic staff completing the state's form. However, we have no reason to believe that this misclassification would be different for 2012 compared to 2015. Secondly, while our results demonstrate that there was a disproportionate reduction in the abortion rate among Hispanic women as a result of this law, we do not have information about the unique barriers this group may face. Previous research demonstrated that women seeking abortion care after HB2 went into effect reported increased travel time and cost (due to transportation, overnight accommodations, childcare, and lost wages) as a barrier [11,12]. These barriers may be particularly burdensome to Hispanic women who have higher rates of poverty and unemployment, as well as lower use V. Goyal et al./Contraception xxx (xxxx) xxx

## A Percent Decrease in Abortions Reported to State by Patient County of Residence between 2012 and 2015



# B Percent Decrease in Abortions to Hispanic Women between 2012 and 2015

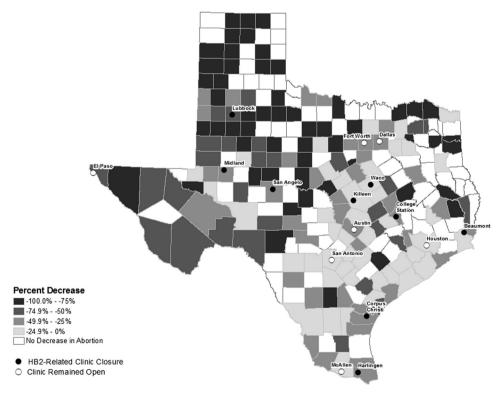


Fig. 1. Percent decrease in abortion rate between 2012 and 2015 in Texas by patient county of residence (A) overall and (B) Hispanic patients.

of preventive healthcare services compared to their non-Hispanic counterparts [5]. Yet, our study doesn't specifically evaluate the barriers that Hispanic women living in Texas may face. We were

also unable to evaluate how HB2 altered self-managed abortion rates. Finally, we did not evaluate other factors that could contribute to a decrease in the abortion rate such as increased use of

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 Table 2

 Reported number of abortion cases, population of reproductive aged women, abortion rate, and percent change in abortion rate by race-ethnicity and county clinic availability\* in 2012 and 2015 in Texas.

	2012			2015			Percent change
	Reported abortion cases	Population	Abortion rate	Reported abortion cases	Population	Abortion rate	(95% CI)
Open clinic							
White	10,323	800,425	12.90	8217	768,611	10.69	-17.11 (-19.51, -14.70)
Black	12,146	425,608	28.54	10,443	442,236	23.61	-17.25 (-19.42, -15.09)
Hispanic	16,877	1,270,117	13.29	14,339	1,406,802	10.19	-23.29 (-25.00, -21.59)
Other	3201	197,046	16.24	2568	233,396	11.00	-32.27 (-35.79, -28.75)
Closed clinic							
White	2076	191,520	10.84	1433	185,056	7.74	-28.56(-33.37, -23.75)
Black	1287	52,054	24.72	906	52,151	17.37	-29.73(-35.71, -23.76)
Hispanic	3496	220,768	15.84	2222	236,402	9.40	-40.65(-43.80, -37.49)
Other	273	21,807	12.52	303	24,973	12.13	-3.08 (-18.93, 12.77)
No Clinic							
White	7047	1,144,068	6.16	6219	1,127,005	5.52	-10.41(-13.47, -7.36)
Black	2775	205,533	13.50	2785	220,676	12.62	-6.53(-11.44, -1.61)
Hispanic	4147	800,615	5.18	3658	884,511	4.14	-20.16(-23.71, -16.61)
Other	1068	134,586	7.94	1160	154,718	7.50	-5.52 (-13.37, 2.33)

<sup>\*</sup> Open clinic = county with open clinic in both 2012 and 2015; closed clinic = county with open clinic in 2012, but law-related clinic closure in 2015; no clinic = county with no clinic in 2012 nor 2015.

**Table 3**Reported number of abortion cases, population of reproductive aged women, abortion rate, and percent change in abortion rate by race-ethnicity and change in distance to open clinic in 2012 and 2015 in Texas.

	2012			2015		Percent change	
	Reported abortion cases	Population	Abortion rate	Reported abortion cases	Population	Abortion rate	(95% CI)
0 miles							
White	16,151	1,674,118	9.65	13,357	1,640,643	8.14	-15.61 (-17.55, -13.68)
Black	14,455	590,239	24.49	12,827	622,814	20.60	-15.90 (-17.90, -13.90)
Hispanic	21,330	1,825,199	11.69	17,949	2,035,410	8.82	-24.54 (-26.04, -23.04)
Other	4159	316,458	13.14	3637	371,644	9.79	-25.54 (-28.85, -22.22)
1-24 miles							
White	366	63,920	5.73	305	59,980	5.09	-11.19(-24.69, 2.30)
Black	170	12,681	13.40	135	12,295	10.98	-18.10 (-36.60, 0.41)
Hispanic	415	86,321	4.81	341	90,334	3.77	-21.48(-32.73, -10.23)
Other	28	3036	9.22	30	3246	9.24	0.21 (-51.40, 50.82)
25-49 miles							
White	646	82,929	7.79	509	79,655	6.39	-17.97(-27.50, -8.44)
Black	536	24,798	21.61	467	24,722	18.89	-12.61 (-23.45, -1.76)
Hispanic	914	132,743	6.89	712	135,795	5.24	-23.85(-31.31, -16.39)
Other	141	8826	15.98	110	9938	11.07	-30.72 (-47.99, -13.44)
50-99 miles							
White	1120	126,414	8.86	694	118,983	5.83	-34.17(-40.40, -27.93)
Black	836	35,902	23.29	530	34,996	15.14	-34.96 (-42.04, -27.88)
Hispanic	633	61,523	10.29	456	65,774	6.93	-32.62(-40.73, -24.51)
Other	99	10,992	9.01	82	12,026	6.82	-24.29 (-46.45, -2.13)
100+ miles							
White	1163	188,632	6.17	1004	181,411	5.53	-10.24 (-17.81, -2.66)
Black	211	19,575	10.78	175	20,236	8.65	-19.77 (-35.85, -3.69)
Hispanic	1228	185,714	6.61	761	200,402	3.80	-42.57 (-47.76, -37.38)
Other	115	14,127	8.14	172	16,233	10.60	30.16 (-0.57, 60.89)

effective methods of contraception. Yet, unmet demand for contraception among Texas women is well documented so increased use is unlikely to contribute to our findings [16–22].

As legislative threats to in-clinic abortion availability continue, our study clearly demonstrates that these restrictions disproportionately harm Hispanic women in Texas. Non-White women experience both a greater need for and reduced access to abortion services [23]. Legislative restrictions on abortion exacerbate the existing health disparities faced by non-White women creating an environment in which one group is more likely to experience later abortion, unintended childbirth, and an inability to achieve personal fertility desires compared to another group [3]. These

restrictive policies place already disadvantaged groups at greater risk for potentially worse health outcomes.

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