

# Perceived Access to Abortion Among Women in the United States in 2018: Variation by State Abortion Policy Context

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**Objectives.** To describe perceptions of access to abortion among women of reproductive age and their associations with state abortion policy contexts.

**Methods.** We used data from the 2018 Survey of Family Planning and Women's Lives, a probability-based sample of 2115 adult women aged 18 to 44 years in US households.

**Results.** We found that 27.6% of women (95% confidence interval [CI] = 23.3%, 32.7%) believed that access to medical abortion was difficult and 30.1% of women (95% CI = 25.6%, 35.1%) believed that access to surgical abortion was difficult. Adjusted for covariates, women were significantly more likely to perceive access to both surgical and medical abortions as difficult when they lived in states with 4 or more restrictive abortion policies compared with states with fewer restrictions (surgical adjusted odds ratio [AOR<sub>surgical</sub>] = 1.60, 95% CI = 1.15, 2.21; AOR<sub>medical</sub> = 1.65, 95% CI = 1.04, 1.95). Specific restrictive abortion policies (e.g., public funding restrictions, mandatory counseling or waiting periods, and targeted regulation of abortion providers) were also associated with greater perceived difficulty accessing both surgical and medical abortions.

**Conclusions.** State policies restricting abortion access are associated with perceptions of reduced access to both medical and surgical abortions among women of reproductive age. (*Am J Public Health.* 2020;110:1039–1045. doi:10.2105/AJPH.2020.305659)

Since the 1973 Supreme Court decision in *Roe v Wade* recognizing women's constitutional right to abortion, states have enacted over 1000 laws or regulations restricting access to abortion.<sup>1</sup> These restrictions commonly include prohibitions on the use of state funds to pay for most abortions, state-mandated preabortion counseling (including sometimes medically inaccurate or misleading information), and waiting periods of 24 hours or more between receiving counseling and obtaining an abortion.<sup>1,2</sup> These restrictions also include TRAP (Targeted Regulation of Abortion Providers) laws, which regulate the types of facilities where surgical or medical abortions can be performed and the types of providers who can provide surgical or medical abortions.<sup>3</sup> Moreover, recent restrictions include a near-total ban on abortion in Alabama, bans of abortion after 6 weeks in Georgia and Mississippi, several other state laws poised to reach the Supreme Court, and a 2019 regulation

withholding Title X family planning program funding from clinics that provide abortion services or refer patients to abortion providers.<sup>4,5</sup> Each of these abortion restrictions may affect women's perceptions of access to abortion. However, no national studies have documented current perceptions of abortion access among women residing in the United States or the associations between abortion policy contexts and perceptions of abortion access.

As conceptualized by Aday and Andersen's framework for the study of access to medical care, access encompasses the outcomes of health service utilization and consumer

satisfaction.<sup>6</sup> These outcomes are shaped by the inputs of health policy, health system characteristics, and population- and individual-level predisposing characteristics, enabling resources, and need. Research specifically investigating abortion access is commonly measured by abortion rates, a utilization outcome in the access framework.<sup>7–9</sup> Secondary measures of access have included the availability of medical facilities providing abortions and waiting times (i.e., characteristics of the health care system) as well as barriers to care, such as travel times, out-of-pocket medical costs, and exposure to antiabortion harassment, affecting women seeking abortion services (i.e., the presence or absence of enabling resources).<sup>10–13</sup> None of these measures, however, provides an indicator of women's own perceived access to abortion.

This study adds to the literature on abortion access by directly measuring a potentially critical determinant of women's propensity to seek an abortion: the perceived difficulty of accessing abortion services. The perception of difficulty in accessing care can encompass factors from across the access framework, including difficulty of finding a provider; travel costs, time costs, and out-of-pocket monetary costs of services; and any transactional and emotional costs associated with the logistics of arranging for services. The contexts of restrictive state abortion policies have the potential to increase all of these barriers, thereby increasing the

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perceived difficulty of accessing abortion services.

When women perceive difficulty in accessing medical care, they may decide to delay or forgo needed care.<sup>14,15</sup> Women may also be prevented from obtaining their preferred service (e.g., a medical vs surgical abortion). By evaluating the associations between abortion policy contexts and women's perceived abortion access, we are able to gain a broader perspective on the impact of abortion regulations. All women, not only those who have sought or received an abortion, can provide feedback on the perceived difficulty of accessing care, and perceived difficulty may be a very close proxy for actual difficulty accessing care. Moreover, we can separately gauge their perceptions of difficulty in accessing medical and surgical abortions. Traditional measures of abortion rates and access do not distinguish between these 2 types of abortions. We do so here because there are important differences between these abortion options, including availability to women during different weeks of their pregnancy, variation in effectiveness and cost, and the number of clinic visits required. Women may also prefer 1 method to another, and access to each abortion type may vary by location and state abortion policy context.

Results from previous studies on the effects of abortion regulations on abortion access have been mixed. Whereas Medicaid funding restrictions have been consistently associated with reductions in state-level abortion rates, mandatory counseling, waiting periods, and TRAP laws have been found to have little or no association with abortion rates.<sup>8,9</sup> At the same time, TRAP laws and other abortion regulations have been associated with reductions in the number of facilities where abortions are available, greater travel time required to reach these facilities, increases in the out-of-pocket medical costs of abortions, and an increase in second-trimester surgical (rather than first-trimester medical) abortions.<sup>10–12</sup> Importantly, prior studies have found that the effects of these regulations vary by women's predisposing characteristics and enabling resources. For example, regulations tend to have a greater effect on abortion access for younger women, lower-income women, and women living in rural areas.<sup>8,16</sup>

This study used newly available data from the 2018 Survey of Family Planning and Women's Lives (SFPWL) to describe perceptions of access to abortion among women of reproductive age (18–44 years) in early 2018. We then evaluated the associations between state abortion policy contexts and the perceived difficulty of abortion access. Drawing on the Aday and Andersen access framework and existing literature, we hypothesized that a greater number of abortion restrictions in women's state of residence, state limits on public funding of abortion, state counseling or waiting periods, and state TRAP laws would be associated with greater perceived difficulty in accessing abortion services among women of reproductive age. Throughout our analyses, we distinguished between perceived difficulty of access to surgical abortion and perceived difficulty of access to medical abortion.

## METHODS

The SFPWL was drawn from NORC at the University of Chicago's AmeriSpeak consumer panel, a probability-based sample that is representative of US households and is weighted (using the 2017 Current Population Survey) to be nationally representative of adult US women of reproductive age. The 2018 SFPWL surveyed 2115 women in both English and Spanish, was administered online (93%) and by telephone (7%), and achieved a weighted cumulative response rate of 9.4%.<sup>17</sup> Women participating in the survey received an incentive worth \$5. Our analyses were limited to 2066 women with nonmissing responses to questions about perceived access to abortion.

## Measures

The SFPWL addressed women's experiences with family planning as well as their opinions about the effects of unplanned births and access to affordable contraception. Because of concerns that women surveyed may not fully understand the descriptors "medical" and "surgical" in the context of abortion, we provided clarifications of these terms as part of the survey questions.<sup>18</sup> Surgical abortion included the text "also known as in-clinic abortion, D&C [dilation and

curettage], D&E [dilation and evacuation], or suction abortion." Medical abortion included the text "also known as the abortion pill, medication abortion, RU-486, or Mifepristone."

To measure perceived access to surgical and medical abortions, women were asked 2 similarly worded questions: "If a woman living near you wanted a surgical (medical) abortion, how easy or difficult do you think it would be for her to find a place to have one?" Responses to the access questions were "very difficult," "somewhat difficult," "somewhat easy," "very easy," or "unsure." For logistic regression analyses, we dichotomized the responses to compare "somewhat difficult or very difficult" with "somewhat easy, very easy, or unsure."

To account for individual-level predisposing characteristics and enabling resources that can influence demand for abortion services and perceptions of access, our measures also included women's responses to socio-demographic questions about their age, race and Hispanic ethnicity, education, income, work status, marital status, frequency of religious service attendance, pregnancy history, and use of birth control. For each woman surveyed, AmeriSpeak also provides information on her state of residence and whether she lives in a metropolitan statistical area (MSA, or urban location) or non-MSA (i.e., rural or suburban location).

We used women's state of residence to categorize the abortion policy context in their state (Appendix A, available as a supplement to the online version of this article at <http://www.ajph.org>). We first categorized women as living in a state with more versus less restrictive abortion access policies based on 2017 data from the Guttmacher Institute.<sup>1</sup> We categorized states with 4 to 10 major abortion restrictions as more restrictive and states with fewer than 4 abortion restrictions as less restrictive. We also evaluated whether women lived in states with 3 common restrictions on abortion (no vs yes indicators): limited or no public funding for most abortions, counseling requirements or waiting periods to receive abortions, and TRAP laws regulating both surgical and medical abortion sites.<sup>2,3</sup> Because the women surveyed were all aged older than 18 years, we did not consider parental involvement laws.

To account for population-level predisposing characteristics and enabling resources, as well as state health policy context, we used women's state of residence to merge in key demographic, economic, and political characteristics of each state to the SFPWL. These measures, confounders drawn from abortion literature,<sup>9,19–21</sup> included the women's unemployment rate, women's poverty rate, proportion of women who were college graduates, proportion of women who were single, proportion of women who were uninsured, proportion of the state population identifying as Evangelical, and an indicator of Republican control of state government. This indicator equaled 1 when both the governor was a Republican and Republicans had majority control of the state legislature. The indicator equaled zero when control was divided between Republicans and Democrats or when Democrats controlled both the executive and legislative branches of state governments. Each of these characteristics has been previously associated with the adoption of abortion-related policies by states or state abortion rates and may affect individual-level perceptions of access.<sup>9,19–21</sup> We used proportion Evangelical rather than other measures of Christianity or religiosity on the basis of prior literature, which, using proportion Evangelical to capture both individual abortion beliefs and the power of Evangelical influence on state government, found disproportionate influence on state abortion policies.<sup>19,20</sup> We obtained state demographic and economic data from the 2018 Current Population Survey.<sup>22</sup> Data on the proportion Evangelical were from the Pew 2014 US Religious Landscape Study.<sup>23</sup> Data on Republican control of state government in 2018 were from the National Conference of State Legislators.<sup>24</sup>

## Analysis

We first estimated women's perceived access to abortion for both medical and surgical abortion. We next estimated differences in women's perceived access to surgical and medical abortions by each of our 4 measures of state abortion policy context. We evaluated differences in proportions between categories using a 2-sided *t* test. We then evaluated differences in women's sociodemographic backgrounds between women reporting that

perceived access to surgical was somewhat to very difficult (yes vs no) and between women reporting that perceived access to medical abortion was somewhat to very difficult (yes vs no). We used the Rao–Scott  $\chi^2$  test for categorical comparisons. Finally, we estimated logistic regression models to assess the relationship between the abortion policy context and perceived access to abortions after controlling first for women's socio-demographic characteristics and second for women's characteristics and state-level demographic, economic, and political characteristics. We used Stata/SE version 14 (StataCorp LP, College Station, TX) for all analyses, and all analyses used survey weights to account for the complex survey design of the SFPWL.

## RESULTS

Women had similar perceptions of access to both surgical and medical abortions (Figure 1). At 1 end of the spectrum, we found that 40.4% of women (95% confidence interval [CI] = 35.6%, 45.2%) believed that access to surgical abortion was very to somewhat easy (i.e., easy) and 44.3% of women (95% CI = 35.8%, 43.1%) believed that access to medical abortion was easy. At the other end of the spectrum, we found that 27.6% of women (95% CI = 23.3%, 32.7%) believed that access to medical abortion was very to somewhat difficult (i.e., difficult) and 30.1% of women (95% CI = 25.6%, 35.1%) believed that access to surgical abortion was difficult. Evaluating cross tabulations between perceptions of access to surgical and medical abortions, we found that 12.4% of women (95% CI = 10.5%, 14.7%) had mixed perceptions of access to surgical abortion and access to medical abortion. This included 5.7% who were unsure about access to either medical or surgical abortion, 4.7% who believed that surgical abortion was more difficult to access than medical abortion, and 2.1% who believed that medical abortion was more difficult to access than surgical abortion.

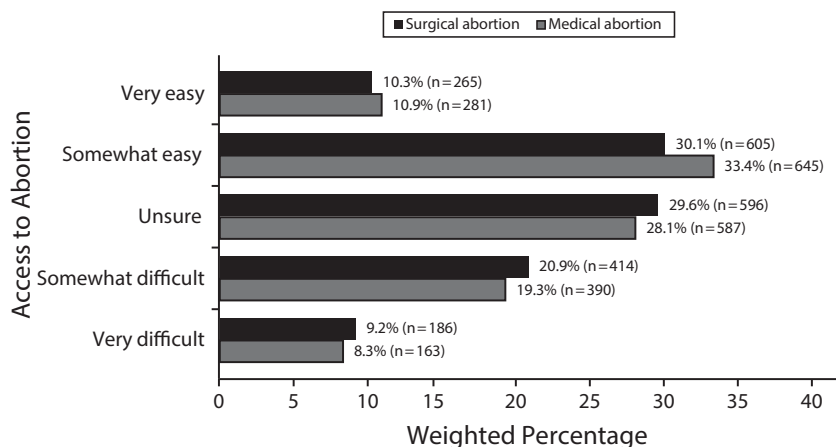
Perceptions of access to both surgical and medical abortion varied significantly by state abortion policy contexts (Figure 2). Women who lived in states with 4 or more restrictive abortion policies were significantly more likely to perceive access to medical abortions

as difficult (30.6%; 95% CI = 26.7%, 34.8%) than were women who lived in other states (23.6%; 95% CI = 19.4%, 28.5%). We found a similar pattern for perceived access to surgical abortion, but the difference was not significant. Women who lived in states with TRAP laws were significantly more likely to perceive access to surgical abortion as difficult (34.6%; 95% CI = 30.0%, 39.7%) than were women in other states (27.1%; 95% CI = 23.4%, 31.2%). We found no difference in perceived access to medical abortions between participants living in states with versus without state TRAP laws, even though we focused on states that applied TRAP laws to both surgical and medical abortions. Women were also more likely to perceive access to both surgical and medical abortions as difficult when their state limited public funding for abortion, or when their state required either counseling or waiting periods before an abortion could be performed.

Some of these differences by state policy contexts could potentially be explained by differences in the sociodemographic characteristics of women with different perceptions of access. Compared with women who believed that access was not difficult, women who believed access to either surgical or medical abortions was difficult were younger and more likely to be low income, never married, or to live in a nonmetropolitan area (Table 1). For surgical abortion only, we found that women who believed that access was difficult attended religious services infrequently and had never been pregnant or had never had an unplanned pregnancy.

Adjusted for these sociodemographic covariates, differences in perceptions of access by state policy contexts persisted (Table 2). Women who lived in states with 4 or more restrictive abortion policies, limited public funding of abortion, mandatory counseling or waiting periods, or TRAP laws had higher odds of perceiving difficulties in access to surgical abortions than women living in states without these laws and regulations. Similarly, women who lived in states with 4 or more restrictive abortion policies, limited public funding of abortion, or mandatory counseling or waiting periods had higher odds of perceiving difficulty accessing medical abortions.

Of the state-level economic and demographic characteristics that we considered, we



Note. We report unweighted n's and weighted percentages. The sample size was n = 2066.

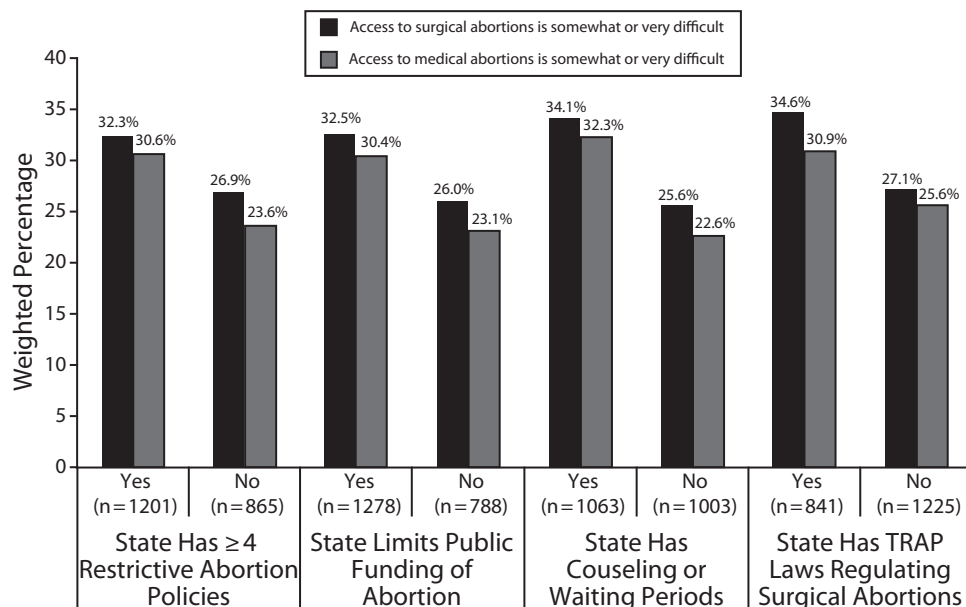
**FIGURE 1—Perceived Access to Surgical Abortion Compared With Medical Abortion Among Women Aged 18–44 Years: Survey of Family Planning and Women’s Lives, United States, 2018**

found that only women’s poverty rate and proportion of women who were college graduates were significantly associated with women’s perceptions of abortion access. Adjusting for these 2 state-level characteristics, differences in perceptions of access by state policy context persisted (Table 2).

In supplemental analyses (Appendix A), we also explored how Republican control of state government and the proportion of the state population identifying as Evangelical shaped the abortion policy context and women’s perceptions of access. In logistic regressions adjusting for the

sociodemographic characteristics of women in our study and state sociodemographic characteristics, we found that women living in states controlled by a Republican governor and legislature had significantly greater odds of perceiving abortion access to be difficult than were those living in states with Democratic leadership (surgical adjusted odds ratio [AOR<sub>surgical</sub>] = 1.82, 95% CI = 1.35, 2.46; AOR<sub>medical</sub> = 1.88, 95% CI = 1.38, 2.57). Similarly, we found that a higher proportion of the state population identifying as Evangelical was significantly associated with greater odds of perceiving abortion access to be difficult (AOR<sub>surgical</sub> = 11.91, 95% CI = 2.64, 53.77; AOR<sub>medical</sub> = 19.64, 95% CI = 3.91, 98.57).

Overall, our results strongly suggest that laws and regulations restricting access to abortion fuel women’s perceptions that access is difficult. At the same time, women’s perceptions of abortion access are also significantly associated with 2 other aspects of the state abortion policy context: Republican control of the state government and Evangelical identification. Because of the high correlations between each of these aspects of the state abortion policy context, we cannot specifically identify the effects of any 1 aspect.



Note. We report unweighted n's and weighted percentages. We calculated 2-sided *t* tests for significant differences between women who experience restrictions on access in their state (yes) and those who do not (no). Perceived access to surgical abortions did not differ significantly between women living in states with 4 or more restrictions and those living in states with fewer restrictions (yes vs no: *P* = .08). Perceived access to medical abortions did not differ significantly by the enactment of TRAP (Targeted Regulation of Abortion Providers) laws in a state (yes vs no: *P* = .09). All other differences are significant at *P* < .05. The sample size was n = 2066.

**FIGURE 2—Perceived Access to Surgical and Medical Abortion Among Women Aged 18–44 Years: Survey of Family Planning and Women’s Lives, United States, 2018**

**TABLE 1—State Abortion Policy Contexts and Demographic Characteristics by Perceptions of Access to Medical and Surgical Abortions Among Women Aged 18–44 Years: Survey of Family Planning and Women’s Lives, United States, 2018**

	Access to Surgical Abortion Is Somewhat or Very Difficult			Access to Medical Abortion Is Somewhat or Very Difficult		
	No, No. (%)	Yes, No. (%)	<i>P</i>	No, No. (%)	Yes, No. (%)	<i>P</i>
<b>State abortion policies</b>						
≥ 4 restrictive policies	816 (55.5)	385 (61.8)	.09	837 (55.0)	364 (63.5)	.02
Public funding limits	869 (59.7)	408 (67.0)	.04	896 (59.5)	382 (68.2)	.02
Counseling/waiting periods	705 (49.0)	358 (59.1)	< .01	725 (48.7)	338 (60.7)	< .01
TRAP laws	577 (35.9)	264 (44.3)	.02	596 (36.7)	245 (42.9)	.09
<b>Age, y</b>						
			< .01			< .01
18–29	438 (41.3)	224 (55.0)		467 (42.5)	195 (53.0)	
30–39	728 (39.5)	286 (33.1)		740 (38.7)	274 (34.7)	
40–44	300 (19.3)	90 (11.9)		306 (18.8)	84 (12.4)	
<b>Race/ethnicity</b>						
Non-Hispanic White	746 (54.0)	333 (59.0)	.22	785 (54.9)	294 (57.1)	.81
Non-Hispanic Black	224 (14.9)	74 (10.8)		221 (14.3)	77 (12.2)	
Hispanic	360 (20.7)	136 (20.1)		364 (20.4)	132 (20.8)	
Non-Hispanic other	136 (10.4)	57 (10.1)		143 (10.4)	50 (9.9)	
High school or less education	326 (33.4)	136 (31.7)	.66	335 (32.3)	127 (34.4)	.59
<b>Income</b>						
			.03			.07
Low (< 138% FPL)	364 (21.4)	184 (26.1)		384 (22.0)	164 (25.1)	
Moderate (139%–399% FPL)	701 (42.1)	272 (37.8)		709 (40.7)	264 (41.2)	
High (≥ 400% FPL)	375 (36.4)	139 (36.1)		394 (37.4)	120 (33.6)	
Working	1010 (67.1)	410 (67.3)	.96	1050 (67.7)	370 (66.0)	.66
Never married	668 (47.0)	296 (57.6)	< .01	693 (47.6)	271 (57.1)	.01
Attends religious services infrequently (< 1/mo)	921 (63.8)	418 (73.1)	.02	967 (65.7)	372 (68.7)	.38
Never pregnant	424 (33.4)	201 (43.8)	.01	450 (34.4)	175 (42.0)	.13
No unplanned pregnancies	729 (54.9)	317 (62.3)	.05	763 (55.8)	283 (60.8)	.37
<b>Birth control use in past 6 mo</b>						
			.59			.97
Always	821 (54.1)	346 (58.0)		855 (55.2)	312 (55.6)	
Sometimes/rarely	146 (12.1)	55 (9.3)		145 (11.4)	56 (11.0)	
Never	261 (18.2)	98 (15.8)		267 (17.9)	92 (16.4)	
No sex with man for 6 mo	231 (15.6)	99 (16.8)		239 (15.5)	91 (17.0)	
Non-MSA	103 (9.0)	84 (13.3)	.07	108 (8.6)	79 (14.7)	.02
All women	1466 (71.0)	600 (29.0)		1513 (73.2)	553 (26.8)	

Note. TRAP = Targeted Regulation of Abortion Providers. We report unweighted *n*'s and weighted percentages adjusted for survey design. *P* values are calculated for Rao–Scott  $\chi^2$  test for categorical comparisons. The Federal Poverty Level (FPL) is defined on the basis of 2016 poverty guidelines (see <https://aspe.hhs.gov/computations-2016-poverty-guidelines>). Non-MSA indicates that the respondent did not live in a metropolitan statistical area (MSA). Because of space limitations, we do not show missing categories for income (*n* = 31), religion (*n* = 6), never pregnant (*n* = 19), no unplanned pregnancy (*n* = 33), and birth control use (*n* = 9). The sample size was *n* = 2066.

## DISCUSSION

Numerous medical research studies have found that both medical and surgical abortions are safe and effective.<sup>25,26</sup> In the United States, both types of abortion are legal, but following the *Planned Parenthood of Southeastern Pennsylvania v Casey* decision in 1992, states have broad authority to impose regulations on access to abortion so long as regulations do not pose an “undue burden”

to the woman seeking an abortion.<sup>9</sup> As a result, women face significant legal and institutional barriers to both surgical and medical abortions in many states.<sup>4</sup> These include requirements for women seeking an abortion to receive state-mandated counseling that may include misleading information, to delay their medical care during a waiting period, or to obtain an ultrasound prior to their abortion.<sup>1</sup> These also include TRAP

regulations restricting what types of medical providers can provide surgical abortions, and what types of medical facilities can offer them.<sup>1</sup>

Using data from the 2018 SFPWL, this study found that women’s perceptions of abortion access were significantly associated with the abortion policy contexts of their states. Adjusted for women’s sociodemographic characteristics and state sociodemographic characteristics, the

**TABLE 2—Logistic Regressions of the Abortion Policy Context on Women Perceiving Access to Surgical Abortions and Medical Abortions as Somewhat or Very Difficult: Survey of Family Planning and Women’s Lives, United States, 2018**

Access to Abortions Somewhat or Very Difficult	State Has ≥ 4 vs < 4 Restrictive Abortion Policies		State Does vs Does Not Limit Public Funding of Abortion		State Does vs Does Not Have Counseling or Waiting Periods		State Does vs Does Not Have TRAP Laws Regulating Abortion Sites	
	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)
<b>Surgical abortions</b>								
Adjusted <sup>a</sup>	1.30 (0.96, 1.75)	1.38 (1.01, 1.89)	1.37 (1.00, 1.86)	1.46 (1.06, 2.01)	1.51 (1.12, 2.03)	1.62 (1.18, 2.23)	1.42 (1.06, 1.91)	1.50 (1.11, 2.02)
Adjusted <sup>b</sup>	...	1.60 (1.15, 2.21)	...	1.66 (1.19, 2.33)	...	1.72 (1.25, 2.37)	...	1.54 (1.15, 2.07)
<b>Medical abortions</b>								
Adjusted <sup>a</sup>	1.43 (1.04, 1.95)	1.43 (1.03, 1.99)	1.46 (1.06, 2.01)	1.45 (1.05, 2.05)	1.63 (1.20, 2.22)	1.64 (1.18, 2.82)	1.30 (0.96, 1.76)	1.31 (0.96, 1.78)
Adjusted <sup>b</sup>	...	1.65 (1.18, 2.32)	...	1.62 (1.15, 2.30)	...	1.78 (1.27, 2.48)	...	1.36 (1.00, 1.85)

Note. AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio; TRAP = Targeted Regulation of Abortion Providers. Effects of each policy context variable are estimated in separate survey logistic regressions. Survey logistic regressions adjust for weighting and survey design effects. AORs include control variables for age, race/ethnicity, education, income, work status, marital status, religious service attendance, ever pregnant, ever had an unplanned pregnancy, frequency of birth control use, and rural/urban location. Adjusted models with state-level characteristics also include women’s poverty rate and proportion women who are college graduates. State women’s unemployment rate, proportion single women, and proportion women without health insurance were not significantly associated with perceived access and were excluded from the final models. The sample size was n = 2066.

<sup>a</sup>Adjusted for individual-level characteristics.

<sup>b</sup>Adjusted for state-level characteristics.

marginal effects of these policies on women’s perceptions of abortion access are substantial. Compared with less restrictive states, the perceived difficulty of access to surgical and medical abortions were, respectively, 9.2 percentage points and 9.6 percentage points greater in the most restrictive states. Compared with states without restrictions on public funding of abortion, the perceived difficulty of accessing surgical and medical abortions were, respectively, 10.0 percentage points and 9.3 percentage points greater in states with limits on public funding of abortion. Compared with states without counseling or waiting periods, the perceived difficulty of accessing surgical and medical abortions were, respectively, 10.7 percentage points and 10.9 percentage points greater in states requiring counseling or waiting periods. Lastly, the perceived difficulty of access to surgical and medical abortions were, respectively, 8.5 percentage points and 6.0 percentage points greater in states with TRAP laws compared with state without TRAP laws.

### Limitations and Strengths

We recognize that our analysis has limitations. Most importantly, the predisposing characteristics and enabling resources of women in states with and without restrictive policies may differ in ways that we could not fully address in our analysis. However, we controlled for available sociodemographic

characteristics of women in our sample and controlled for several state-level socio-demographic characteristics that could confound the association between perceived access and state abortion policy contexts. With these control variables in our models, the positive associations between restrictive policies and perceived difficulty in accessing surgical and medical abortions persisted. At the same time, the high correlations between each aspect of the state abortion policy contexts that we considered prevented us from attributing associations to any 1 policy dimension or aspect of the state political environment. We can only state that they work together to create a context in which women perceive difficulty accessing abortion. For example, this analysis considered TRAP laws collectively, but they encompassed a wide-range of laws that regulate facilities and providers providing abortion services. Future research should provide a more nuanced analysis of how specific types of TRAP laws influence perceptions of access and utilization of abortion services.

We also recognize that the survey questions did not measure women’s opinions about abortion access and could not capture whether restrictive policies corresponded to women’s values. Additionally, some of the women surveyed may not have understood the difference between a medical and a surgical abortion.<sup>18</sup> Thus, responses to our

questions may reflect perceptions of abortion access more generally. Lastly, women’s perceptions of access may not reflect their actual access. For example, a recent study found that more than half of women surveyed in Texas were not very or not at all aware of abortion laws that had been passed in the last 5 years.<sup>27</sup> Nevertheless, women’s perceptions can influence their behaviors. When they perceive difficulties in accessing care, women with unplanned pregnancies may be discouraged from seeking medical attention to discuss their options.

By focusing on perceptions of access, our results complement existing research showing that restrictive abortion policies and regulation reduce access to abortion services by reducing the supply of abortion providers and increasing both the direct medical cost and indirect nonmedical cost (e.g., travel time) of obtaining an abortion.<sup>10–12</sup> When women with unplanned pregnancies perceive substantial barriers to accessing abortions, they may self-induce abortion or carry an unwanted pregnancy to term. One recent national study estimated that 1 of every 10 abortions was a self-induced abortion attempt.<sup>28</sup> Media analyses found higher rates of Google searches for information on self-induced abortions in states with more legal barriers to abortions.<sup>29</sup> Those searching for information on self-induced abortions tended to be adolescents and young adults with an

unintended pregnancy.<sup>30</sup> Self-induced abortion, which results when women lack access to safe and effective abortion services, is not legal in the United States and can lead to serious medical complications, including death.<sup>31</sup> Likewise, an unwanted birth can result in negative health, economic, and social risks for women and their children.<sup>32–34</sup>

## Public Health Implications

Women's perceived access to abortion can influence their propensity to seek an abortion and is associated with state abortion policy context. As states implement new abortion restrictions and protections, routine monitoring of perceived abortion access is necessary to understand the effects of new policies. Beyond perceived access, it will be critical to understand the effects of new policies on abortion rates, unintended births, and the well-being of women and their families. **AJPH**

## CONTRIBUTORS

K. M. Perreira led the conceptualization and design of the study, drafted the initial article, and reviewed and revised the article. E. M. Johnston contributed to study design, reviewed data analysis, and contributed to the drafting and revision of the article. A. Shartzter contributed to study design, reviewed data analysis, and contributed to the drafting and revision of the article. S. Yin conducted the data analysis and contributed to the drafting and revision of the article.

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## CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

## HUMAN PARTICIPANT PROTECTION

This study was approved by the institutional review board of the Urban Institute. Participants were provided information about the study and were considered to have provided informed consent by continuing to complete the anonymous survey.

## REFERENCES

- Nash E, Gold RB, Ansari-Thomas Z, Cappello O, Mohammed L. Policy trends in the states: 2017. Guttmacher Institute. 2018. Available at: <https://www.guttmacher.org/article/2018/01/policy-trends-states-2017>. Accessed May 1, 2019.
- Guttmacher Institute. State laws and policies: an overview of abortion laws. 2018. Available at: <https://www.guttmacher.org/state-policy/explore/overview-abortion-laws>. Accessed December 1, 2018.

- Guttmacher Institute. Targeted regulation of abortion providers. 2018. Available at: <https://www.guttmacher.org/state-policy/explore/targeted-regulation-abortion-providers>. Accessed December 1, 2018.
- Keating D, Tierney L, Meko T, Rindler D. The widening gap in abortion laws in this country. *Washington Post*. May 15, 2019. Available at: [https://www.washingtonpost.com/nation/2019/05/09/which-states-are-blocking-abortion-and-which-are-enacting-protections/?hpid=hp\\_hp-top-table-main-abortion-protections:homepage&hpid=hp\\_hp-top-table-main-abortion-protections:homepage](https://www.washingtonpost.com/nation/2019/05/09/which-states-are-blocking-abortion-and-which-are-enacting-protections/?hpid=hp_hp-top-table-main-abortion-protections:homepage&hpid=hp_hp-top-table-main-abortion-protections:homepage). Accessed May 17, 2019.
- Compliance with statutory program integrity requirements. Final rule. *Fed Regist*. 2019. 42 C.F.R. 59; 7714-7791. Available at: <https://www.federalregister.gov/documents/2019/03/04/2019-03461/compliance-with-statutory-program-integrity-requirements>. Accessed May 1, 2019.
- Aday LA, Andersen R. A framework for the study of access to medical care. *Health Serv Res*. 1974;9(3):208–220.
- Jones RK, Jerman J. Abortion incidence and service availability in the United States, 2011. *Perspect Sex Reprod Health*. 2014;46(1):3–14.
- Medoff MH. State abortion policies, targeted regulation of abortion provider laws, and abortion demand. *Rev Policy Res*. 2010;27(5):577–594.
- New MJ. Analyzing the effect of anti-abortion US state legislation in the post-Casey era. *State Polit Policy Q*. 2011; 11(1):28–47.
- Gerds C, Fuentes L, Grossman D, et al. Impact of clinic closures on women obtaining abortion services after implementation of a restrictive law in Texas. *Am J Public Health*. 2016;106(5):857–864.
- Grossman D, Baum S, Fuentes L, et al. Change in abortion services after implementation of a restrictive law in Texas. *Contraception*. 2014;90(5):496–501.
- Jones RK, Ingerick M, Jerman J. Differences in abortion service delivery in hostile, middle-ground, and supportive states in 2014. *Womens Health Issues*. 2018; 28(3):212–218.
- Jerman J, Jones RK. Secondary measures of access to abortion services in the United States, 2011 and 2012: gestational age limits, cost, and harassment. *Womens Health Issues*. 2014;24(4):e419–e424.
- O'Donnell J, Goldberg A, Lieberman E, Betancourt T. "I wouldn't even know where to start": unwanted pregnancy and abortion decision-making in Central Appalachia. *Reprod Health Matters*. 2018;26(54):98–113.
- Fuentes L, Lebenkoff S, White K, et al. Women's experiences seeking abortion care shortly after the closure of clinics due to a restrictive law in Texas. *Contraception*. 2016;93(4):292–297.
- Jones RK, Jerman J. How far did US women travel for abortion services in 2008? *J Womens Health (Larchmt)*. 2013;22(8):706–713.
- Shartzter A, Johnston E. The Survey of Family Planning and Women's Lives: methodology. Urban Institute. 2016. Available at: [https://www.urban.org/sites/default/files/survey-of-family-planning-and-womens-lives-methodology-2016\\_0.pdf](https://www.urban.org/sites/default/files/survey-of-family-planning-and-womens-lives-methodology-2016_0.pdf). Accessed May 1, 2019.
- Weitz TA, Foster A, Ellertson C, Grossman D, Stewart FH. "Medical" and "surgical" abortion: rethinking the modifiers. *Contraception*. 2004;69(1):77–78.
- Bentele KG, Sager R, Aykanian A. Rewinding Roe v. Wade: understanding the accelerated adoption of

- state-level restrictive abortion legislation, 2008–2014. *J Women Polit Policy*. 2018;39(4):490–517.
- Medoff MH. State abortion politics and TRAP abortion laws. *J Women Polit Policy*. 2012;33(3):239–262.
- Medoff MH. Unintended Pregnancy and Abortion Access in the United States. *Int J Popul Res*. 2012;2012: 1–9.
- Flood S, King M, Rodgers R, Ruggles S, Warren JR. *Integrated Public Use Microdata Series, Current Population Survey: Version 6.0 [data set]*. Minneapolis, MN: IPUMS; 2018.
- Pew Research Center. US Religious Landscape Study. 2018. Available at: <http://www.pewforum.org/religious-landscape-study>. Accessed May 2, 2019.
- National Conference of State Legislatures. 2018 state & legislative partisan composition. 2018. Available at: <http://www.ncsl.org/research/about-state-legislatures/partisan-composition.aspx>. Accessed May 2, 2019.
- Ireland LD, Gatter M, Chen AY. Medical compared with surgical abortion for effective pregnancy termination in the first trimester. *Obstet Gynecol*. 2015;126(1):22–28.
- Kahn JG, Becker BJ, MacIsaac L, et al. The efficacy of medical abortion: a meta-analysis. *Contraception*. 2000; 61(1):29–40.
- White K, Potter JE, Stevenson AJ, Fuentes L, Hopkins K, Grossman D. Women's knowledge of and support for abortion restrictions in Texas: findings from a statewide representative survey. *Perspect Sex Reprod Health*. 2016; 48(4):189–197.
- Grossman D, Ralph L, Raifman S, et al. Lifetime prevalence of self-induced abortion among a nationally representative sample of US women. *Contraception*. 2018; 97(5):460–462.
- Stephens-Davidowitz S. The return of the DIY abortion. *New York Times*. March 5, 2016. Available at: <https://www.nytimes.com/2016/03/06/opinion/sunday/the-return-of-the-diy-abortion.html>. Accessed May 1, 2019.
- Jerman J, Onda T, Jones RK. What are people looking for when they Google "self-abortion"? *Contraception*. 2018;97(6):510–514.
- Tasset J, Harris LH. Harm reduction for abortion in the United States. *Obstet Gynecol*. 2018;131(4):621–624.
- Foster DG, Biggs MA, Ralph L, Gerds C, Roberts S, Glymour MM. Socioeconomic outcomes of women who receive and women who are denied wanted abortions in the United States. *Am J Public Health*. 2018;108(3): 407–413.
- Gerds C, Dobkin L, Foster DG, Schwarz EB. Side effects, physical health consequences, and mortality associated with abortion and birth after an unwanted pregnancy. *Womens Health Issues*. 2016;26(1):55–59.
- Herd P, Higgins J, Scinski K, Merkurieva I. The implications of unintended pregnancies for mental health in later life. *Am J Public Health*. 2016;106(3):421–429.