

Coercing Women's Behavior: How a Mandatory Viewing Law Changes Patients' Preabortion Ultrasound Viewing Practices

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Abstract Over the past two decades, US states have enacted legislation regulating ultrasound scanning in abortion care, including mandating that abortion patients view their ultrasound image. Legal scholars have argued that, by constructing ultrasound viewing as a necessary part of patients' abortion decision making, these laws aim to control and constrain how women make personal decisions about their bodies and parenthood. To date, however, the discussion of the impact of ultrasound viewing laws on women's decisional autonomy has occurred in the abstract. Here, we examine the effect of Wisconsin's mandatory ultrasound viewing law on the viewing behavior of women seeking care at a high-volume abortion-providing facility. Drawing both on chart data from patients before and after the law went into effect and on in-depth interviews with women subject to the mandatory viewing law, we found that the presence of the law impacted patients' viewing decision making. Moreover, we documented a differential effect of the law by race, with larger impacts on the viewing behavior of black women compared with white women. Our findings call for renewed attention to the coercive power of laws regulating abortion on a macrolevel, investigating not only how they affect individuals' behavior and experience but also which individuals are impacted.

Keywords abortion, ultrasound viewing, informed consent, decisional autonomy

Over the past two decades, US states have enacted legislation regulating ultrasound scanning in abortion care. Early laws regulated the provision of ultrasound itself, for example, by requiring a preprocedure ultrasound scan for all abortion patients or that providers inform patients where they could receive an ultrasound. More recent laws have expanded that purview to

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regulate ultrasound viewing. Although ultrasound scanning is routine in abortion care to confirm intrauterine pregnancy and determine gestational age (O'Connell et al. 2008, O'Connell et al. 2009), patient viewing of the ultrasound image is not generally considered part of medical care. That is, the viewing experience is ancillary to abortion care itself. Seventeen states currently require that, if an ultrasound is performed, the patient must be offered the opportunity to view the image (Guttmacher Institute 2018). An additional six states have laws on the books that require abortion providers to describe and display the ultrasound image to patients. (The laws are enjoined in two of these states.) Such laws are commonly called mandatory viewing laws, although women are permitted to turn their heads, look away, or close their eyes to avoid seeing the image if they wish.

Broadly, these laws are designed to influence women's pregnancy decision making in favor of continuing the pregnancy. They are structured under the finding of the US Supreme Court that the state has an "important and legitimate interest in potential life" (*Planned Parenthood of Southeastern Pennsylvania et al. v. Robert P. Casey et al.*, 505 U.S. 871 [1992]) and can express a preference for childbirth over abortion (883). Adopting gendered language, the Supreme Court has also held that "respect for human life finds an ultimate expression in the bond of love the mother has for her child" (*Gonzales v. Carhart*, 505 U.S. 159 [2007]), positioning regret as an "unexceptionable" outcome of women's abortion decisions, despite "no reliable data to measure the phenomenon" (159). This language, grounded in the essentialist presumption that women are innately maternal, has enabled an argument that women seeking abortion require extensive information about their bodies and the procedure as part of informed consent. Supporters of ultrasound viewing laws assert that ultrasound viewing is a component of informed consent wherein the patient learns important facts about the prospective abortion, including the development status of her embryo or fetus, and argue that such information can dissuade women from abortion (Green 2013).

There is little evidence, however, that ultrasound viewing laws persuade women to continue rather than terminate their pregnancies. Research in multiple countries has consistently found no evidence that voluntary viewing dissuades women confident that abortion is the right decision for them from choosing abortion (Gatter et al. 2014; Wiebe and Adams 2009; Bamigboye et al. 2002). Indeed, research on voluntary preabortion ultrasound viewing largely finds few effects on women seeking abortions: it does not cause negative emotions in most women (Kimport, Weitz, and Foster 2014), nor does it make the abortion more emotionally difficult for

the vast majority of women (Wiebe and Adams 2009). When considering the subset of women who do experience negative feelings or emotional difficulty related to viewing their ultrasound, we should be cautious about presuming this effect is inherently bad: women may appreciate those feelings and seek that experience as part of their coping process (Kimport et al. 2012). Together, this body of work suggests that voluntary ultrasound viewing, while not medically necessary for abortion care, does not have broad negative effects on abortion patients.

The single study on the effects of mandatory preabortion ultrasound viewing on women's abortion decisions, using the same data as analyzed below, found only a small increase (~ 2 percent) in the percentage of women who did not proceed to abortion (Upadhyay et al. 2017). Comparing patients before and after the enactment of a law mandating viewing, the study found that the vast majority of women who presented for care at the facility proceeded to abortion (91 percent prelaw and 89 percent postlaw). The strongest factor associated with not proceeding to abortion was being uncertain that abortion was the right decision (associated with six times the odds of continuing the pregnancy), but few women fell into this category, as over 93 percent reported being certain that abortion was the right decision at the time of their first clinic visit. The presence of the law was also associated with not proceeding to abortion, but its effect was comparatively small: associated with 1.23 times the odds.

Yet focusing on specific effects of ultrasound viewing on individual women may overlook the broader implications of viewing laws and, especially, mandatory viewing laws. By constructing ultrasound viewing as a necessary part of patients' abortion decision making, these laws aim to control and constrain how women make personal decisions about their bodies and parenthood (Sanger 2008, 2017; Denbow 2015). The meaning of ultrasound viewing, in other words, is different when it is entirely voluntary versus when the offer to view or the display of the screen is legally required, as is the case in mandatory viewing states.

This has both practical and legal implications. Practically, research shows that the presence of laws legislating which information or practices are part of women's abortion decision making negatively impacts their experience of that information or practice. Gould et al. (2013), for example, found that women's experience of abortion counseling is different—and less likely to be experienced as helpful—when the content of counseling is legally mandated. Beynon-Jones (2015) argues that women's engagement with preabortion ultrasound viewing is inextricably tied to (their understanding of) the social meanings of viewing. Extrapolating her findings to settings where viewing is legally regulated, one can expect that patient

knowledge of viewing or offer-to-view requirements could influence viewing behavior by making viewing seem normative.

Legally, these laws, with their intent to dissuade women from abortion, impede individuals' decisional autonomy (Sanger 2017), increase surveillance, and violate liberty (Denbow 2015). It bears noting as well that these laws only impact some individuals and thus only some people's decisional autonomy. Laws regulating abortion care are restricted to people who can become pregnant. This means both their initial rationale and their effects must be considered in reference to the restricted population they impact (i.e., women). Moreover, the demographics of abortion patients, a population that is disproportionately women of color (Jerman, Jones, and Onda 2016; Jones and Jerman 2017), means that these laws disproportionately impact already socially marginalized subgroups.

To date, however, the discussion of the impact of ultrasound viewing laws on women's decisional autonomy has occurred in the abstract (e.g., Sanger 2008, 2017; Denbow 2015), without empirical evidence of whether and how these laws affect real women's preabortion ultrasound viewing decisions. To address this gap, we examined the effect of Wisconsin's mandatory ultrasound viewing law on the viewing behavior of people seeking care at a high-volume abortion-providing facility. Drawing on both chart data from patients before and after the law went into effect and in-depth interviews with women subject to the mandatory viewing law, we found that the presence of the law impacted patients' viewing decision making, even as previous analyses of these data show that the law generally did not affect patients' abortion decisions (Upadhyay et al. 2017). Moreover, we document a differential effect of the law on viewing behavior, with larger impacts on the viewing behavior of black women compared to white women. Given the rise of state laws regulating preabortion ultrasound viewing, these questions of why patients do and do not view and the impact of the law on their decisional autonomy are increasingly pressing.

Methodology

Wisconsin is one of the four states with a mandatory ultrasound viewing law currently enforced. To understand the impact of the law on patients' viewing behavior, we conducted mixed-methods data collection, including both quantitative and qualitative data sources, at a large abortion-providing facility in the state. Before the law went into effect on July 7, 2013, patients at the facility already typically received a preabortion ultrasound and were offered the opportunity to view the image. Viewing, in other words, was

voluntary. After the law went into effect, the ultrasound technicians placed the ultrasound screen in the patient's line of sight and described any viewable external features or internal organs of the pregnancy. Patients were legally permitted to turn their heads away or avert their eyes. When they did so, the technician documented it in their charts. Study protocols were approved by the University of California, San Francisco (UCSF) institutional review board.

Between March and September 2015, we abstracted medical chart data for all abortion patients who visited the facility between July 7, 2012, and July 6, 2014, representing a full year before and a full year after the law went into effect. Abstraction was conducted by two facility staff and one UCSF research assistant. All three abstractors received a full day of onsite training in standardized data abstraction protocol, which included instruction to enter all data and clinical notes as they appeared in the chart and not to interpret the data. The research team randomly chose completed charts for abstraction checks. Errors were corrected as they were found, and we implemented additional training to prevent future similar errors.

Among the variables abstracted were patient age, race or ethnicity, highest level of education, number of previous births, weeks of gestation at ultrasound, certainty that abortion was the right decision for them (bifurcated into firm and uncertain), and whether they viewed their ultrasound image. For patients who had more than one visit in which they had the option to view the ultrasound image, we considered them to have viewed if they did so at any of the visits. We abstracted data from 5,342 charts. However, 51 charts were missing data on the patients' ultrasound viewing status; thus, the analytic sample for this analysis is 5,291 charts: 2,705 before and 2,586 after the mandatory ultrasound viewing law went into effect.

The characteristics of the patient population at the study site were similar for the year before and the year after the mandatory viewing law went into effect. In both periods, the largest percentages of women who sought abortion at the study facility were between twenty and twenty-four years old, had completed at least some college, were white, had given birth at least once, and were less than nine weeks into their pregnancy. Overwhelmingly, they were firm in their decision to have an abortion (93 percent) during both time periods.

We assessed differences between pre- and postlaw populations that did or did not view the ultrasound. We calculated the percent decline in the population that did not view between pre- and postlaw periods for each characteristic subgroup and used difference-in-difference testing to

determine which subgroups had significantly larger or smaller declines, controlling for other sociodemographic covariates.

In parallel to the abstraction, between May and September 2015 we conducted semistructured, in-depth phone interviews with women who sought an abortion at the facility and were subject to the mandatory viewing law. Following their ultrasound, women were given a flyer describing the study as an investigation of women's experience of the Wisconsin ultrasound law and inviting them to call a toll-free phone number for more information. Patients were eligible if they were over eighteen and English speaking and had received an ultrasound as part of abortion care at the study site. Callers were screened for eligibility, provided verbal informed consent, and, if interested, were scheduled for a phone interview at a later time. For one week during the recruitment period, a member of the study team conducted the screening, verbal informed consent, and interview scheduling with interested participants onsite. Interviews took place between one and three weeks after initial recruitment. This window meant we were able to find times that accommodated participant needs but also ensured that their ultrasound experience was recent enough to remain fresh in their memory.

Three-quarters of the way through data collection, we noted that the racial demographics of our interview sample did not match that of the overall clinic population. Specifically, white patients were overrepresented in the interview sample. For the remaining recruitment, we added an additional screening question regarding potential participants' self-identified race to purposively sample patients of color so as to better capture the racial demographics of the patient population. This strategy enabled our interview sample to better approximate the demographics of the overall population. We ceased recruitment when we reached saturation.

The first author conducted the phone interviews. Relevant to this analysis, interviews included discussion of women's ultrasound experience, including why they did or did not view their ultrasound image. For respondents who viewed the image, interviews included questions about their experience of viewing and any emotional response they had to viewing, as well as about any prior experiences viewing ultrasound images (e.g., prior pregnancy). We also asked respondents their age, race, gestational age when they received the ultrasound, and number of existing children. Interviews ranged from just under forty minutes to over ninety minutes in length, averaging about sixty minutes. Respondents were compensated for their time with a \$50 gift card.

Interviews were recorded and transcribed verbatim. The first author analyzed transcripts in Atlas.ti 7 using elaborative coding, with general codes

developed based on the research question. Excerpts for these codes were detail coded using thematic coding, an iterative, inductive approach that identifies emergent themes and patterns in the data through the application of codes. The authors regularly convened to discuss emerging themes and to contextualize them in the analytical findings from the abstracted medical charts. This contextualization sometimes yielded additional codes for the interview analysis. Coding was considered complete when no new codes were identified.

Twenty-three women completed an in-depth interview. Most ($n=13$) were in their twenties, but they ranged in age from eighteen to forty-four years. The majority of respondents identified as white ($n=15$), with six who identified as black, one who identified as multiracial (black and white), and one who identified as Latina. Overall, the group had high levels of educational attainment: sixteen had at least some college, six had high school degrees, and one left school after eleventh grade. All but three respondents were in the first trimester of pregnancy (<13 weeks' gestation) at the time of their ultrasound; the remaining three were in the second trimester of pregnancy at thirteen, fifteen, and sixteen weeks' gestation, respectively.

Findings

In the year before the law went into effect, 62 percent ($n=1671$) of patients viewed their ultrasound image and 38 percent ($n=1034$) did not (table 1). These numbers were very different after the law went into effect, even as the demographics of the patient population did not noticeably change. Among those who were subject to the mandatory viewing law, 92 percent ($n=2,381$) viewed their ultrasound image, while just 8 percent ($n=205$) did not (table 1). In other words, with the implementation of the mandatory viewing law, the viewing rate went from 62 percent to 92 percent of patients, representing about a 50 percent increase.

Some of the women interviewed exemplify this change. Nineteen interviewees viewed their ultrasound image, but far fewer would have in a scenario where the image was not explicitly presented to them. Specifically, nine said they would not have asked to view; two more were unsure whether they would have asked to view but thought they probably would not; and one said she maybe would have asked. As detailed below, respondents' accounts of the ultrasound scan help illuminate how the law impelled this shift in patients' viewing behavior, demonstrating that while some of the change was because viewing became the default, some can be traced to

Table 1 Characteristics of Patients Seeking Abortion at the Study Site in the Year before and the Year after the Mandatory Ultrasound Viewing Law Went into Effect

Characteristic	<i>n</i> (%)	
	Prelaw	Postlaw
Total <i>N</i>	2,705 (100)	2,586 (100)
Age (years)		
<20	287 (10.6)	286 (11.1)
20–24	903 (33.4)	820 (31.7)
25–29	739 (27.3)	716 (27.7)
30–39	669 (24.7)	671 (25.9)
40+	107 (4.0)	92 (3.6)
Highest level of education		
Less than high school	472 (17.5)	422 (16.3)
High school diploma or GED	567 (21.0)	514 (19.9)
Associate degree/<4 years college	1,061 (39.2)	1,061 (41.0)
Bachelor's degree or higher	542 (20.0)	537 (20.8)
Not in chart	63 (2.3)	52 (2.0)
Race/ethnicity		
White	1,186 (43.8)	1,166 (45.1)
Black	1,032 (38.2)	945 (36.5)
Latina	238 (8.8)	238 (9.2)
Asian/Pacific Islander	106 (3.9)	104 (4.0)
Other/multiracial	80 (3.0)	85 (3.3)
Not in chart	63 (2.3)	48 (1.9)
Ultrasound viewing status		
Viewed	1,671 (61.8)	2,381 (92.1)
Did not view	1,034 (38.2)	205 (7.9)

the operation of social pressure. Then, using the medical chart data, we further investigated whether the impact on viewing practices was consistent across subgroups of patients at the study facility.

Viewing under the Law

By respondents' accounts, a major reason women who would not otherwise have viewed their ultrasound image did so was that viewing was something that just kind of happened: viewing the ultrasound image was less a decision and more a default. One twenty-five-year-old white woman explained, "I did look, because I figured, why not? If it's there, I want to see it, I might as well," although she later noted that she would not have asked to view if

the screen had not been presented to her. A thirty-year-old white patient, who similarly would not have asked to view, reported, "I guess I wasn't really paying that close of attention to it. She was doing the jelly stuff at the same time. I'm like, 'Yeah, okay, I'll look.'" Others spoke of looking at the screen during the scan out of curiosity because it was easily available. One twenty-three-year-old white woman said, "I just was kind of curious what it looks like at that stage, so I just did [view the image], I guess." In practice, ultrasound viewing was not something these respondents actively opted to do. Instead, it was something they failed to opt out of. As a twenty-six-year-old white patient who would not have asked to view explained, "I had no reason not to look. I just felt, like, well, why not look?" With a mandatory viewing law in place, the structure of the viewing decision shifted from choosing whether to view to choosing whether to not view.

Some respondents chafed at this shift. One twenty-four-year-old white respondent said she thought the ultrasound experience "was a little bit of a waste of time" and said emphatically that she thought mandatory viewing was unnecessary: "I had already made my decision, and I am a smart, capable person. I know what a pregnancy is, and I know how it all works. I am familiar, vaguely, with the human anatomy. And so, to have her just be required to show me these things and to point them out was just a little much." She explained she would probably not have asked to view if the ultrasound image had not been presented to her. Yet, despite her objection to the requirement, when presented with her ultrasound image, she did not look away. She explained that she did not because she was "just curious to see if, like, because it's so early on [four weeks], just what does that look like?" This interest was ancillary to her abortion experience and inconsequential to her pregnancy decision making: "It doesn't really make too much of a difference to me. I mean, I could have not looked at it and I think, how I am right now, I would be the same." Nonetheless, the law's requirement that she be presented with her ultrasound image changed her viewing decision making.

Other respondents cast ultrasound viewing differently, as something that was integral to a moral abortion experience. A twenty-seven-year-old biracial woman said she viewed because she believed, as a person seeking abortion, that viewing was the responsible thing to do:

I wanted to see because I think it's important for me. I wanted to be very informed the whole way through. I wanted to see how far along I was, how big the baby looks, because I've had other pregnancies, my other three. And so, I wanted to be more informed. . . . I think that when you're making that decision [to have an abortion], it's not an easy decision to

make. So, for me it's important to know what it looks like, what's going to occur, what's going to happen. To me it's important. I don't know if everyone feels that way. But I wanted to see. I wanted to know.

In essence, this respondent characterized viewing as a desired act of becoming informed—and herself, therefore, as an informed abortion patient. Perhaps reacting to popular narratives casting abortion patients as irresponsible (for discussion, see Cockrill and Nack 2013), her emphasis on facing the “facts” of her pregnancy by viewing enabled her to construct her abortion decision as moral.

Elsewhere in the interview, however, it became clear that her characterization of viewing as an important and desired component of obtaining abortion care was an *ex post facto* justification. She explained that, before having the ultrasound, it had not occurred to her that she could—or should—view the image: “I definitely didn't know it was an option prior to going into that room that you'd be able to see [the ultrasound image]. I thought that they would just look for their own confirmation and move you along. So, I probably wouldn't have [viewed] if she wouldn't have [presented the screen] because I wasn't thinking to look, to want to know at that very moment, prior to me going in.” Although she described viewing as “important” after the fact, her account makes clear that the categorization of viewing the ultrasound image as conveying information emerged from the way viewing was offered. Prior to her appointment, she did not think about viewing. When the screen was presented to her, however, she felt differently. She explained that, with the screen in front of her, she felt she could not turn down the opportunity to see and to “know”: “I didn't want to continue on the appointment and think to myself like I wish I would have seen or I wish I would have known. I didn't want any kind of regret in that sense. I wanted to know.” The presentation of the screen, per the law, constructed viewing as informational and something that conveyed not just an image but also knowledge.

A final group of respondents who said they likely would not otherwise have asked to view sourced their decision to view in their perception of social expectations. A twenty-five-year-old Latina woman, for example, explained that the presentation of the screen communicated an obligation to look, even as the technician explained that she was permitted to look away: “She told me that I can look if I wanted to, [that] I didn't have to, but I felt obligated that I had to. . . . Just basically, it's sitting right in front of you.” Similarly, a thirty-eight-year-old white respondent explained that, regardless of what the technician said to her, being presented with the image made her feel that the question of whether to view was a test—and choosing to

view showed that she was a responsible and good person: “I felt like they were testing me or wanting to see if I’d take responsibility. I was like, ‘Yes, I’ll take responsibility and look at it.’” A forty-four-year-old white respondent echoed this idea that her decision to view was a kind of social or moral test. She said, “I was thinking in my head, too, I’m like, maybe if I tell this lady I don’t want to look at it, I’ll sound like a bitch, you know? And then maybe I was just saying that because I didn’t want to sound like a bitch to myself, if that makes any sense.” This patient was more equivocal about whether she would have asked to view her ultrasound image if it were not already presented, saying alternately that “maybe” she would ask and then “probably” she would ask. Her equivocation can be contextualized in her broader difficulty imagining a viewing opportunity not constrained by social expectations (Beynon-Jones 2015).

A handful of respondents said the law did not impact their viewing behavior. Five said they would have asked to view the screen had it not already been displayed, offering reasons for viewing that echoed some of the explanations described above. Notably, their plans to view preceded their appointments and the screen being displayed. For example, one twenty-two-year-old black woman talked about using viewing to be comfortable with her decision to have an abortion: “The best thing for me to do was look at it, own up to what I want to do. I want to do it, so I have to own up to it. I wanted to look. I wanted the picture. I wanted to do the whole nine. I didn’t want to feel as if I don’t want to look: ‘No, I don’t want to see it.’ No, I don’t want to feel like that. I want to feel comfortable with my decision.” This woman’s account echoes the construction of viewing as an important component of an abortion experience, specifically connected to being a responsible patient. She wanted to feel like—and, more pointedly, to be—a good abortion patient, and she understood viewing her ultrasound image to be an element of being “good.” Indeed, she reported asking if she could view her ultrasound image before the technician even had a chance to turn on the screen. Notably, this construction of the meaning and importance of viewing preceded her interaction with the law mandating viewing.

Not Viewing under the Law

There were limits to the law’s ability to compel abortion patients to view their ultrasound images. Four women we interviewed did not look at the image. As noted in the introduction, the law permits women to turn their heads or avert their eyes if they do not wish to view the image, while still requiring that the ultrasound technician display the image in the woman’s line of sight.

Two women who declined to view explained that choice by citing the existence of the law. A thirty-seven-year-old white woman explained that she turned her head away from the screen because of her understanding of the intentions behind the law mandating its display. She said, “I understand the impetus behind it [the required viewing], and it’s trying to, you know, change your mind and dissuade you.” Since, as she said, “I had my mind made up at that point in time,” she saw no reason to view. Later in the interview, she offered a more pointed critique of the law:

It’s designed to make it [abortion], frankly, more difficult. . . . It doesn’t really serve a purpose. If you’re trying to, quote, “educate” someone about it [their pregnancy], you know, maybe twenty years ago I would have bought that argument, where the Internet wasn’t, you know, literally at everybody’s fingertips. But you can’t tell me that somebody who goes in doesn’t know, you know, a lot about, “Okay, I’m, whatever, six weeks or seven weeks, and this is what is going on with my body.” Right? You know that because we Google everything, right? So, it’s not information that somebody does not already know, does not already have.

To her, viewing was one more piece in “the global picture of all of these sort of ‘hoops’ you have to jump through” to obtain an abortion. She understood viewing, alongside the mandatory twenty-four-hour waiting period and the pamphlet on resources for parenting she was required to receive, to be “designed to discourage women [from abortion].” She objected to these materials and practices as “biased and one-sided.” For these reasons, although she reported feeling tempted to view her ultrasound image as she entered the room, she refused to do so in a context where it was legally compelled.

Another patient who did not view her ultrasound image, a twenty-three-year-old black woman, also obliquely referenced the law in explaining her viewing decision making. Although she reported not knowing about the law before her appointment, she said she believed viewing might cause her to feel attachment for the pregnancy. Explaining that she loves children and remembered viewing the ultrasound images of her two children, she said, “I didn’t want to [look]. I didn’t want to get attached at all.” Her explanation tacitly accepts the premise behind the law that viewing inspires maternal-fetal attachment. Her expectation that viewing would upset her—but not change her mind about abortion—quashed her curiosity, and she opted to turn her head away from the screen. Her decision not to view, then, was mediated by her perception of the purpose and expected effects of viewing, consistent with Beynon-Jones’s (2015) findings.

The remaining two respondents in this category declined to view for reasons not tied to the law. One, a twenty-eight-year-old white woman, explained that she closed her eyes during the scan because of prior experience with ultrasounds. She had received and viewed numerous ultrasounds on her heart in the past. She said of viewing ultrasounds, “I don’t like it . . . I’d rather not see inside my body.” Pregnancy ultrasounds fell into the same category as other ultrasounds, and she simply did not like to look at her ultrasounds. The final respondent who did not view her ultrasound image, a twenty-nine-year-old white woman, had difficulty offering a fully formed reason for declining to view. When asked why she turned her eyes to the ceiling during the scan, she said, “I don’t know. I just didn’t want to look. I don’t know.” This was a moment in which she was uniquely concise. At other points in her interview, she was verbose, offering extensive details, for instance, about the abusive relationship she was in, her addiction to pain medication, and her previous pregnancy. In essence, the ultrasound part of her pregnancy and abortion experience was so minor as to be inconsequential both at the time and in recounting the experience in the interview.

Whom the Law Impacts

The interview data help explain why more women viewed their ultrasound image after the law’s implementation than before. Turning back to the medical chart data, we more closely examined which subpopulations in particular the law impacted. Because the law shifted the viewing decision from one of opting in to view to whether to opt out, we focus on changes in the rates of patients not viewing before and after the law.

It is important to highlight that, prior to implementation of the law, subgroups had different rates of declining to view. White women, for example, had higher rates of declining to view (48 percent) than did black women (27 percent); women forty or more years of age declined to view almost half the time (48 percent), while teens declined to view only about one-quarter of the time (26 percent; table 2). Kimport et al. (2013) found similar variation in viewing rates, including by race and age, in a setting where ultrasound viewing was voluntary. After the law, the decline-to-view rate of all subgroups dropped. Some of the prelaw variation in declining to view held; for example, white women still declined to view at a higher rate than did black women (11 percent vs. 4 percent). For other characteristics, however, rates of declining to view converged, such as among women forty or more years of age (8 percent) and teens (8 percent).

Our interest here, however, is not in variation in viewing rates per se but in whether the law impacted women’s viewing decisions differentially:

Table 2 Patients by Demographic Characteristic Not Viewing Ultrasound, before and after Law, and Relative Percent Decline in Not Viewing

Characteristic	Patients Not Viewing Ultrasound [<i>n</i> (%)]		Relative % Decline
	Prelaw	Postlaw	
<i>N</i>	1,034 (38.23)	205 (7.9)	79
Age (years)			
<20	74 (25.8)	22 (7.7)	70**
20–24 (reference)	318 (35.2)	51 (6.2)	82
25–29	281 (38.0)	41 (5.7)	85
30–39	310 (46.3)	84 (12.5)	73
40+	51 (47.7)	7 (7.6)	84
Highest level of education			
Less than high school	139 (29.4)	30 (7.1)	76**
High school diploma or GED (reference)	223 (39.3)	40 (7.8)	80
Associate degree/<4 years college	395 (37.2)	77 (7.3)	80
Bachelors degree or higher	258 (47.4)	52 (9.7)	80
Race/ethnicity			
White (reference)	569 (48.0)	132 (11.3)	76
Black	276 (26.7)	42 (4.4)	83***
Latina	99 (41.6)	16 (6.7)	84
Asian/Pacific Islander	34 (32.1)	3 (2.9)	91
Other/multiracial	35 (43.7)	7 (8.2)	81

adjusted $p < 0.01$; *adjusted $p < 0.001$

were the viewing decisions of some groups impacted by the law more or less than comparable groups? The final column of table 2 lists the relative percent decline in not viewing after the mandatory viewing law went into effect, by patient characteristic. For the full population, the rate of not viewing dropped from 38 percent to just 8 percent, representing a relative decline of 79 percent.

At the sociodemographic subgroup level, however, the relative decreases in not viewing were not consistently 79 percent and varied significantly by age, education, and race/ethnicity subgroup. For example, the rate of teens not viewing their ultrasound image dropped by 70 percent, the smallest relative percent change, whereas among women twenty to twenty-four years of age it dropped by 82 percent, a much larger relative change ($p = 0.001$). Looking at education subgroups, the relative decline in not viewing was

significantly lower for patients with less than a high school degree (76 percent) compared to those with a degree or equivalent (80 percent, $p=0.009$). Ultimately, we found evidence that both this group's and teens' viewing behavior was less impacted by the law than the other respective subgroups.

Of particular note are the variations by race/ethnicity. The drop in the percentage of white women not viewing their ultrasound image appears large, from 48 percent to 11 percent, whereas the drop in the percentage of black women who did not view was smaller, from 27 percent to 4 percent. However, the relative decline in the percentage who did not view was lower among white women (76 percent) than for all other racial/ethnic groups. Black women's relative decline, compared to white women's, was significantly higher at 83 percent ($p < 0.001$). The relative declines are also notably high for Latina women (84 percent) and Asian/Pacific Islander women (91 percent), although they did not reach statistical significance, likely due to small sample size. After the law, a larger proportion of the women of color shifted from not viewing to viewing. This suggests that the law not only impacted women's viewing decision making across the board but also had a more pronounced effect on the viewing behavior of women of color.

Discussion

The implementation of a mandatory preabortion ultrasound viewing law in Wisconsin dramatically increased the rate of patients viewing their ultrasound image, even as previous analyses of these data show that it did not substantially impact the percentage of women who proceeded to abortion (Upadhyay et al. 2017). The literature consistently points to robust patient interest in preabortion ultrasound viewing (Kimport et al. 2013; Wiebe and Adams 2009; Bamigboye et al. 2002; Graham, Ankrett, and Killick 2010), but the viewing rate after the law in this study is anomalously high, suggesting interference in women's viewing behavior. Using in-depth interviews, we found that the law reconstructed the meaning of ultrasound viewing in abortion care. Many respondents, with the screen placed in their line of sight, perceived viewing as providing them with information about their pregnancy, their abortion decision, and even their bodies. Still other respondents described ways that their interaction with ultrasound viewing became part of a narrative of appropriate patienthood. These respondents talked about how being presented with their ultrasound image transformed viewing into something they felt socially compelled to do. The law was

also implicated in two cases where women decided not to view. Simply put, we found that respondents' viewing decision making was constrained by the expectations and practices of the law, supporting Sanger's (2017) contention that ultrasound laws can undermine an individual's decisional autonomy.

Moreover, we found that this law appears to impact specific individuals' decisional autonomy. For one, it constructs and constrains behaviors undertaken only by pregnant people. Recognizing that not all women become pregnant and that a small number of transgender men do become pregnant, in practice government power exclusively wielded over people who can get pregnant is a power exercised over women. Medical chart data from both before and after the law's implementation, moreover, demonstrate that women of color's decision making was especially impacted by this law: the relative declines in the rates of not viewing among all subgroups of women of color were higher than among white women. This finding suggests that governmental coercion through mandatory ultrasound viewing laws is disproportionately impacting women of color. In the United States, the bodies of women—and women of color in particular—are surveilled more heavily and intrusively than other bodies (Roberts 1999; Ross and Solinger 2017; Nelson 2003). Mandatory ultrasound viewing laws are part of that legacy and contribute to its continuation. By building on and reifying constraints on women's—and particularly women of color's—decisional autonomy, laws like this one contribute broadly to social beliefs about different groups' ability to make decisions, enabling further future constraints.

Future research should examine the reasons for the law's differential impact by race. Our interview sample was too small, particularly when segmented by race, to examine variations by race in women's accounts of why they viewed their ultrasound image. We further note that our analysis is restricted to a single study site, situated in a state with a mandatory viewing law. Our findings may not be generalizable to other states with different population characteristics. In particular, we note the relatively small numbers of Latina and Asian/Pacific Islander patients at the study site. Future research should also consider whether our findings are unique to a mandatory viewing law or broadly true of all regulatory interference in preabortion ultrasound viewing. Given several respondents' emphasis on the discursive experience of viewing, that is, the offer from the technician, for example, we believe these findings are not restricted to mandatory viewing settings.

Mandatory ultrasound viewing laws join the panoply of laws that operate to control women's fertility choices (Lopoo and Raissian 2012; Stopler

2015). Stopler (2015) has argued for a two-prong test of the validity of a given fertility policy: policies must both further a state interest and respect individual rights to liberty and equality. We find little support for the claim that viewing is integral to informed consent: respondents did not characterize viewing as part of their pregnancy decision making. This is consistent with the extant evidence that viewing has only limited effects on women's abortion decisions (Upadhyay et al. 2017; Bamigboye et al. 2002; Gatter et al. 2014; Wiebe and Adams 2009). Together, these findings suggest that, to the extent the state indeed has an "important and legitimate interest in potential life" (*Casey*, 505 U.S. 871), mandatory viewing laws fail to promote a legitimate state interest.

Further, as laws targeted at women and founded on rationales rooted in presuming women's inability to make autonomous decisions (i.e., their extensive need for "informed consent"; Weitz and Kimport 2015), these laws fail to respect equality. Future research should examine and challenge the prevalence of gendered assumptions underpinning the rationale of similar laws. Additionally, our study illustrates that mandatory ultrasound viewing laws disproportionately act on socially marginalized populations, thereby (further) impinging on individual equality. These findings call for renewed attention to the coercive power of laws regulating abortion on a macrolevel, investigating not only how they affect individuals' behavior and experience but also which individuals are impacted. The prominence of individual equality in our findings, moreover, offers support for the importance and utility of a jurisprudence on abortion grounded in the concept of equal dignity, wherein the impact of a law on a vulnerable group, deliberate or not, is considered in evaluations of the law (see Adams and Mikesell 2017).

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