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The indirect moderating effects of racial bias in the context of abortion attitudes and mock healthcare delivery decisions

Andrew S. Franks[1,2,3] | **Y. Jenny Xiao**[4]

[1]Psy.D. Program, Michigan School of Psychology, Farmington Hills, USA

[2]Department of Psychology, Central Michigan University, Mount Pleasant, USA

[3]Department of Psychology, University of Michigan, Flint, USA

[4]School of Interdisciplinary Arts & Sciences, University of Washington Tacoma, Tacoma, USA

Correspondence
Andrew S. Franks, Michigan School of Psychology, Central Michigan University, Farmington Hills, USA.
Email: andrew.franks@cmich.edu

Abstract

The US Supreme Court's decision in the Dobbs v. Jackson Women's Health Organization case stands to exacerbate maternal mortality and other pregnancy-related health risks, especially for women of minority backgrounds. To empirically examine the psychological and behavioral consequences of Dobbs, the indirect moderating influence of racial bias on abortion-related outcomes was assessed across two experiments conducted on Qualtrics using participants from Amazon's Mechanical Turk. In Experiment 1, participants were randomly assigned to read information on the effects of abortion restrictions on maternal mortality that either framed the issue in terms of racial justice or did not include such a framing and then asked about their support for abortion rights. Conditional indirect effects of framing on policy support were found through the mediating mechanisms of moral outrage and realistic threat. In Experiment 2, participants imagined themselves as physicians deciding whether to perform abortions under highly restrictive laws while the patient (described as either Black or White) is experiencing complications, then asked about their willingness to perform the procedure. For the second experiment, conditional indirect effects

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were found through the mediating mechanism of perceived patient symptom severity. Implications of these findings for maternal health and mortality in the Dobbs era are discussed.

Public Significance Statement

The current research provides evidence that racial bias operates to undermine the health of pregnant Black women through differing psychological mechanisms in broad public health contexts versus individual healthcare delivery contexts. Specifically, racial bias interacts with a patient's race (Black vs. White) to undermine support for abortion rights through reduced perceptions of threat and to reduce hypothetical willingness to perform abortions through decreased perceptions of the severity of pregnancy complications.

INTRODUCTION

The Dobbs v. Jackson Women's Health Organization (2022) decision ended nearly half a century of Constitutional protections for a pregnant person's right to bodily autonomy. Thirteen states had trigger laws banning abortion that immediately went into effect as soon as the United States Supreme Court overturned the protections of Roe v. Wade (1973). Additionally, despite voters enacting ballot measures to protect abortion in their own states (including some highly conservative ones), a total of 21 states have complete bans on abortion or gestational limits that are substantially short of fetal viability as of November 2024. An estimated 25 million women of childbearing age currently live in those states (Mulvihill et al., 2023), which also means that they are living with reduced access to birth control, contraception, fertility treatment, and prenatal care (Manian, 2023). Importantly, such consequences tend to have a disproportionately detrimental impact on racial minorities and exacerbate existing racial inequities in maternal mortality (e.g., Hoyert, 2024; Stevenson, 2021; Stevenson et al., 2022; Treder et al., 2023).

The current research involved conducting two experiments manipulating the salience of racial justice (Experiment 1) and the race of a hypothetical patient in need of abortion services (Experiment 2) to examine psychological mechanisms through which these race-based manipulations may influence support for policies protecting abortion rights (Experiment 1) and hypothetical willingness to provide abortion care in states with abortion bans (Experiment 2). By doing so, we hope to enhance understanding of how the risks faced by pregnant individuals, and particularly individuals of color, have been exacerbated by the Dobbs decision at the levels of both broad public policies and individual healthcare delivery. We review research on how racial biases impact healthcare outcomes, including both healthcare policy and delivery (and why we may expect these outcomes to be psychologically different), and what factors are likely to create boundary conditions and serve as intervening variables for such effects.

Reproductive justice in policy and healthcare delivery

It has been well-documented that the United States (in comparison to other wealthy nations) already experienced deficits in maternity-related health outcomes and elevated levels of maternal mortality even before the protections of Roe were eliminated (e.g., Kassebaum et al., 2016; Kennedy-Moulton et al., 2022), and that those negative outcomes are linked to restrictions that subverted Roe's protections even when it was still officially law (Vilda et al., 2021). Preliminary estimates of the additional risks of maternal mortality in the event of a national abortion ban, which has increased in likelihood now that all three branches of government are controlled by anti-abortionists, suggest that maternal mortality may increase by as much as 24% in the general population and as much as 39% among pregnant individuals who are Black (Stevenson et al., 2022). This is especially troubling considering that Black mothers already suffered from a maternal mortality risk that was three times higher than that for White mothers prior to Dobbs (e.g., Hoyert, 2024; Stevenson, 2021).

Despite a clear majority of Americans supporting abortion rights (Pew Research Center, 2024), it is possible for advocacy work to raise public awareness around these issues to backfire, due to deeply rooted racial biases in our society. Examining similar psychological mechanisms, Franks et al. (2022) found that emphasizing *racial* injustices in messaging about healthcare issues *reduced* support for policies meant to mitigate the negative consequences of public health crises among participants who were moderate and higher in racial bias.

In addition to navigating system-level policies, pregnant women also have to confront restrictions and possible biases that occur at the interpersonal level in healthcare delivery. Research has demonstrated that medical trainees report substantial concerns regarding the legal repercussions of providing abortion care where bans are enacted (Zhu et al., 2024). In the post-Dobbs United States, physicians working in states with restrictive abortion bans experience twice as much moral distress (feelings of being powerless to do what one thinks is right) regarding abortions as physicians working in states without such bans (Rivlin et al., 2024). Given the psychological distress, compounded by the existing racial disparity in maternal healthcare, Black women could experience additional barriers to abortion access due to decisions made by abortion providers at healthcare delivery (Stevenson, 2021; Stevenson et al., 2022; Treder et al., 2023).

Racial bias in healthcare policy and healthcare delivery

On a policy level, social safety net programs tend to be perceived as over-benefitting Black Americans, who are also stereotyped as being the typical beneficiaries of such programs (e.g., Brown-Iannuzzi et al., 2017). Such stereotypes lead to reduced support for the social safety net among individuals higher in racial bias (Federico, 2005; Feldman & Huddy, 2005; Gilens, 1995, 1996; Nelson, 1999; Tarman & Sears, 2005). Similar effects are also evident in Europe as immigration from the Middle East has increased in recent decades (Eger, 2009). Further, individuals higher in racial bias also show deficits in support for universal healthcare (Shen & LaBouff, 2016).

An abundance of research has also pointed to racial disparities in direct healthcare delivery, and specifically to the role of racial bias, including implicit racial bias, in such disparities. For instance, Fitzgerald & Hurst (2017) conducted a systematic review that included 27 articles on the effects of implicit racial bias in healthcare settings and concluded that implicit racial biases are related to lower quality of care. A separate review by Hall & colleagues (2015) concluded that healthcare providers have more positive implicit attitudes toward White patients and more negative implicit

attitudes toward Black patients. Such biases are consistently found among healthcare providers in various positions and various levels of training (Maina et al., 2018). Racial biases contribute to reduced perceptions of the seriousness of symptoms in Black patients and to lower rates of referral of Black patients to specialists (Stepanikova, 2012) as well as to physicians providing less information to Black patients (Gordon et al., 2006). A large-scale quantitative analysis of real-world prescription data shows that Black patients are slightly less likely than White patients to receive opioid medications, and when they do receive such prescriptions–Black patients receive much smaller doses (Morden et al., 2021). Relatedly, medical students and early career physicians with higher levels of racial bias perceive Black patients' pain symptoms as lower in severity (Hoffman et al., 2016). Physician racial biases also directly factor into racial disparities in maternal mortality (Saluja & Bryant, 2021).

Given such racial disparities in healthcare policy and delivery, it is reasonable to discuss such issues through a racial justice lens. However, framing problems (i.e., influencing how a problem is perceived by manipulating how it is presented) in terms of Black disadvantage may also backfire and reduce acknowledgment of racial inequities (Littleford & Jones, 2017; Winter, 2006). In fact, prior experimental research has examined the effects of racial justice framing in the context of the COVID-19 pandemic (Franks et al., 2022). Two experiments examined the conditional processes by which framing the pandemic in terms of its disproportionate impact on minorities reduced support for pandemic mitigation policies. It was found that a racial justice framing of the pandemic's health and economic impacts *decreased* support for mitigation efforts among those who scored moderate to high on an explicit measure of racial bias (i.e., effect was conditional on racial bias), and that this conditional effect was mediated by reduced moral outrage and reduced perceptions of threat from the virus. In the current research, we examine similar psychological mechanisms in the context of support for abortion-related policies—an attitude at a high, abstract level (in Experiment 1)—and extend beyond previous work to examine consequences for attitudes and decisions around healthcare delivery, a more concrete, lower-level event (in Experiment 2). We expect that, similar to previous research (Franks et al., 2022), an individual's level of racial bias will moderate the relationship between race-based manipulations and outcomes pertaining to abortion policy, and explore whether similar effects extend to outcomes pertaining to abortion services. In the following sections, we explore potential intervening variables that could mediate such conditional effects consistent with previous research (Franks et al., 2022).

Moral outrage

"Moral outrage" is a feeling of righteous anger that predicts increased motivation to address injustice (e.g., Montada & Schneider, 1989). When people perceive a system as operating with fair processes, unequal outcomes can be seen as acceptable (e.g., Goudarzi et al., 2020; Jost & Hunyady, 2002), but moral outrage arises from distress created when outcomes are unfair (Rushton, 2013) and may even alleviate personal feelings of guilt (Rothschild & Keefer, 2017). This differentiates moral outrage from anger that is elicited by a personal transgression (Batson et al., 2007). Moral outrage, as an extension of a moral concern with fairness, motivates desire to change the system by supporting more equitable distributions of wealth (Franks & Scherr, 2018) and holding powerful agents morally accountable for inequality (Franks, 2019). Measures relating to moral outrage and moral concern with fairness also predict preferences for political candidates (Franks & Scherr, 2015; Sychev et al., 2020; Weinschenk and Dawes, 2019), and responses to campaign messaging (Smith, 2019). Furthermore, moral outrage is predictive of healthcare-related outcomes (e.g., Pike, 1991). Accordingly, in the current research, we hypothesize that moral outrage will

mediate an indirect conditional effect of race-based experimental manipulations on abortion-related outcomes, and additional mediators may be suggested by integrated threat theory.

Integrated threat theory

Integrated threat theory (e.g., Stephan et al., 2005) postulates that feelings of threat can arise from both realistic concerns about one's life and well-being as well as symbolic threats to one's identity and values. Such threats have been studied extensively in the context of social intergroup attitudes (e.g., Stephan et al., 2005) and within public health contexts (e.g., Franks et al., 2022). Realistic threats of abortion restrictions are evident based on the increased rates of maternal mortality when such restrictions are in effect (e.g., Stevenson et al., 2022), and examples of symbolic threats are demonstrated by the criticism of such bans as "unAmerican" (Han, 2021; quoting President Joe Biden regarding an abortion ban in Texas).

When individuals with higher anti-Black bias are exposed to a racial justice narrative regarding the harms of abortion restrictions or told that a patient in need of an emergency abortion procedure is Black, they may perceive abortion bans and abortion-related medical emergencies as less threatening to the health and economic well-being of people like themselves. Accordingly, we can hypothesize that realistic threat and symbolic threat are two possible mediators to an indirect conditional effect of race-based experimental manipulations on abortion outcomes, but these processes may be subject to boundary conditions.

Construal level theory

A large body of research has pointed to why we may expect attitudes and decisions at the abstract (i.e., policy) level to be systematically different from those made at the concrete (i.e., individual) level. For instance, according to the Construal Level Theory, we can perceive and interpret objects, events, and individuals in either low-level, concrete terms or in high-level, abstract terms (e.g., Trope & Liberman, 2010). An abundance of research has provided empirical support that different levels of construal lead to differences in attitudes and judgments, such as moral judgments to prejudicial attitudes (e.g., Eyal et al., 2008; Luguri et al., 2012). For instance, in several studies, when participants adopted abstract thinking, they expressed lower levels of prejudice toward non-normative groups, which was demonstrated to be due to an elevated focus on one's higher-level values (Luguri et al., 2012). And consistently, adopting an abstract mindset led participants to make judgments that are more aligned with their moral values (Eyal et al., 2008). The findings of Construal Level Theory may suggest that the processes affecting decision-making about healthcare policy at the abstract level may differ from those affecting concrete decisions about healthcare delivery.

In addition, previous research on attitudes toward abortion would indicate that one final variable in the realm of gender attitudes must be included as a covariate in our model.

Hostile sexism

Ambivalent sexism theory (Glick & Fiske, 1999) posits that sexism contains both hostile and "benevolent" components. Hostile sexism involves beliefs that women manipulate men with their

sexuality, wrongfully accuse men of discrimination, and seek to take power away from men. Benevolent sexism involves beliefs that "good" women are precious, pure, and in need of protection from men. Much research has demonstrated the impact of both hostile and benevolent sexism in the political arena (e.g., Bock et al., 2017; Ditonto, 2019; Franks, 2020; Knuckey, 2018; Ratliff et al., 2017; Valentino et al., 2018). In addition, myriad studies have shown that higher levels of sexism are predictive of opposition to abortion regardless of the reason for pursuing one (Hodson & MacInnis, 2017; Huang et al., 2014; Osborne & Davies, 2012). While both types of sexism predict more negative attitudes toward abortion, hostile sexism has been more consistently linked to public policy positions (e.g., Chalmers et al., 2023; Chalmers et al., 2024; Petterson & Sutton, 2018), including support for punishment of women who seek abortions (Murphy et al., 2011). Because we expect hostile sexism to play a consistent role across our experimental conditions related to *race*, the construct of hostile sexism is included in our conditional process models as a covariate. We expect hostile sexism to predict lower levels of support for anti-abortion policies (Experiment 1) and lower behavioral intentions to perform abortions (Experiment 2) in the current research.

Overview and hypotheses

We conduct two experimental studies examining the conditional indirect effects of (1) using a racial justice framing (vs. a more general framing) of the negative consequences of abortion bans on support for enacting policies to protect abortion rights and (2) describing a pregnant patient in need of emergency abortion services as Black (vs. White) on willingness to perform an abortion in a hypothetical scenario where abortion is banned in all but the most life-threatening of circumstances. In both cases, conditional process models were tested in which participant racial bias was the moderator; moral outrage, realistic threat, and symbolic threat were mediators; and participant hostile sexism was included as a covariate in a model that is (other than the covariate) conceptually identical to that used by Franks & colleagues (2022). This allowed the model to be further validated in a different public health policy context (Experiment 1) and extended into healthcare services decision-making when individual patients are involved (Experiment 2).

In addition, Experiment 2 tested a second conditional process model that takes into account evidence of physicians' reports of experiencing moral distress (Rivlin et al., 2024) as well as evidence that higher levels of racial bias predict perceptions of lower symptom severity in Black patients (Hoffman et al., 2016). That second model examined conditional indirect pathways through perceived legal and professional consequences of performing an abortion and perceptions of the pregnant patient's symptom severity. Importantly, a large body of research has pointed to why we may expect attitudes and decisions at the abstract (i.e., policy) level to be systematically different from those made at the concrete (i.e., individual) level (e.g., Trope & Liberman, 2010). Experiment 2 specifically will help illuminate whether a low-level, individual-based mindset produces different support for our conceptual model, potentially affecting abortion related attitudes and behavioral intentions through different, less value-driven mediators. We provide more theoretical grounding later in the paper when we introduce Experiment 2.

The experimental hypotheses were as follows, and all hypotheses, methodology, and analyses for both studies were preregistered and data are available at https://osf.io/7ztj2/.

Experiment 1. It was hypothesized that when the negative effects of abortion bans are framed with (vs. without) a focus on racial justice, participants higher in anti-Black racial bias would report lower support for policies strengthening abortion rights through the mediating

mechanisms of reduced moral outrage (H1a), realistic threat (H1b), and symbolic threat (H1c). That is to say that it is expected that the conditional indirect effect of framing on abortion rights policy support will be significant through each of the mediators. Participant hostile sexism was also predicted to explain unique variance in support for abortion rights policies (H1d).

Experiment 2. It was hypothesized that when a pregnant patient in need of emergency abortion services is described as Black (vs. White) participants higher in racial bias will report decreased willingness to perform an abortion in a hypothetical scenario where abortion is banned in all but the most life-threatening of circumstances through the mediating mechanisms of reduced moral outrage (H2a), realistic threat (H2b), and symbolic threat (H2c). Participant hostile sexism was also predicted to explain unique variance in support for abortion rights policies (H2d). Further, in the second model, that same conditional effect is hypothesized to be mediated by increased perception of legal/professional danger (H2e) and lower perceptions of patient symptom severity (H2f).

EXPERIMENT 1

Method

Power analysis

Using G*Power 3.1 and seeking to achieve power of .95 at $\alpha = .05$ for a regression-type model with up to eight predictors to detect small-medium effects ($F^2 = .08$), it was determined that the sample size should be at least 281 participants. However, individuals with high levels of racial bias may be underrepresented on mTurk, and thus we increased the sample size by 25%. Accordingly, the planned sample size for the study was 350.

Participants

Participants ($N = 339$, $M_{Age} = 41.55$, SD = 12.74) were recruited from Amazon's Mechanical Turk online workforce and paid 1 USD to complete an experiment hosted on Qualtrics. The sample was predominantly women (52.8%) with a large minority of men (44.8%) and a small number of nonbinary/third gender individuals (2.4%). The vast majority of participants identified as White (79.4%), with three minority groups comprising most of the rest of the sample: Black (9.7%), Latino/a/x (9.4%), Asian American (8.6%). Participants reported an average political orientation (M 3.41, SD = 1.72) that was slightly below the center of a 7-point scale from Very Liberal (1) to Very Conservative (7).

Independent and dependent variables

Framing manipulation. Participants were randomly assigned to read one of two passages of information regarding the deleterious effects of abortion bans and restrictions in the United States. In the nonracial condition, participants read about the general impacts of abortion bans and restrictions on maternal mortality and health. In the racial condition, participants read about the disproportionate impact of abortion restrictions on the maternal mortality and health of Black women. See Appendix A for full details.

Support for abortion rights policies. Support for abortion rights policies was measured on a 4-item scale (Cronbach's $\alpha = .875$) developed for this study. An example item is "A person should never be forced to carry a nonviable pregnancy (one where the child will not survive past birth) to term." Participants responded to each item on a seven-point scale from 1–"Strongly Disagree" to 7–"Strongly Agree." The responses were summed and divided by 4 to create a composite score with values from 1.00 to 7.00 ($M = 5.57$, SD = 1.46). See Appendix B.

Mediators, moderators, and covariates

Participant racial bias. Racial bias was measured on a 7-item scale that includes four items typically used in the American National Election Studies and three newly created items (Cronbach's $\alpha = .922$). An example item is, "The legacy of slavery continues to make things more difficult for Blacks today (reverse coded)." Participants responded to each item on a seven-point scale from 1–"Strongly Disagree" to 7–"Strongly Agree." The responses were summed and divided by seven to create a composite score with values from 1.00 to 7.00 ($M = 3.63$, SD = 1.51). See Appendix C.

Moral outrage. Moral outrage regarding the effects of abortion bans was measured using a 3-item scale adapted for this research (Cronbach's $\alpha = .956$) based on items from previous scales measuring moral outrage toward other events (e.g., Franks et al., 2022). An example item is: "I was outraged by the Supreme Court decision that eliminated federal abortion rights protections." Participants responded to items on a seven-point scale from 1–"Strongly Disagree" to 7–"Strongly Agree." The responses were summed and divided by 3, resulting in a range of possible scores with values from 1.00 to 7.00 ($M = 5.16$, SD = 1.98). See Appendix D.

Realistic threat. Realistic threat from abortion bans was measured using 5 items adapted for this specific issue (Cronbach's $\alpha = .921$) from a subscale originally developed to measure perceptions of threat from COVID-19 (Kachanoff et al., 2021). Each item started with the stem "To what degree do you think restrictions on abortion rights are a threat to:" with an example ending being "individual health." Participants responded to items on a four-point scale from 1–"Not a Threat" to 4–"Major Threat." The responses were summed and divided by 4, resulting in a range of possible scores with values from 1.00 to 4.00 ($M = 2.81$, SD = 0.94). See Appendix E.

Symbolic threat. Symbolic threat from abortion bans was measured using 5 items adapted for this specific issue (Cronbach's $\alpha = .908$) from a subscale originally developed to measure perceptions of threat from COVID-19 (Kachanoff et al., 2021). Each item started with the stem "To what degree do you think restrictions on abortion rights are a threat to:" with an example ending being "American traditions and values." Participants responded to items on a four-point scale from 1–"Not a Threat" to 4–"Major Threat." The responses were summed and divided by 4, resulting in a range of possible scores with values from 1.00 to 4.00 ($M = 2.67$, SD = 0.95). See Appendix E.

Hostile sexism. Hostile sexism was measured using 3 items taken from the original Ambivalent Sexism Inventory (Glick & Fiske, 1999) that are typically used in the National Election Studies (Cronbach's $\alpha = .881$). An example item is: "Women seek to gain power by getting control over men." Participants responded to items on a seven-point scale from 1–"Strongly Disagree" to 7–"Strongly Agree". The responses were summed and divided by 3, resulting in a range of possible scores with values from 1.00 to 7.00 ($M = 2.19$, SD = 1.08). See Appendix F.

TABLE 1 Experiment 1 correlations among key variables.

Variable	*M*	SD	1	2	3	4	5
1. Policy	5.57	1.464	–				
2. R Threat	2.81	0.937	.734	–			
3. S Threat	2.67	0.946	.625	.860	–		
4. Outrage	5.16	1.987	.870	.731	.657	–	
5. Racial bias	3.63	1.512	−.562	−.528	−.447	−.627	–
6. H sexism	2.19	1.085	−.451	−.392	−.320	−.405	.539

Procedure

Participants responded to recruitment materials posted on Amazon's Mechanical Turk online platform and, after choosing to participate, followed a link to the experiment hosted on Qualtrics. Participants then completed an informed consent document. Once informed consent was obtained, participants were randomly assigned to read one of the two passages and could not proceed until answering attention check items correctly. Next, participants responded to the dependent measure items, followed by moral outrage items, realistic threat items, symbolic threat items, racial bias, and hostile sexism items in that order. Finally, participants were thanked for their time and given a completion code to enter on Mechanical Turk to receive payment. All research methodology was approved by the Institutional Review Board at the home institution of the second author.

Results

All analyses were conducted using SPSS version 29.0 for Windows.

Correlations

Pearson's zero-order correlation analyses were conducted between all pairwise combinations of support for abortion rights policy, participant racial bias, moral outrage, realistic threat, symbolic threat, and hostile sexism. All variables were correlated with each other at $p < .001$. Importantly, abortion rights policy support was positively related to moral outrage ($r = .870$), increased realistic threat ($r = .734$), and increased symbolic threat ($r = .625$) and inversely related to racial bias ($r = -.562$) and hostile sexism ($r = -.451$). Correlations between all variables are summarized in Table 1.

Multiple regression analysis

A multiple linear regression analysis was conducted with abortion rights policy support as the dependent variable and participant racial bias, moral outrage, realistic threat, symbolic threat, and hostile sexism as predictors. The full model predicted a significant 78.9% of the variance in abortion rights policy support, $F(6, 332) = 206.51$, $p < .001$. Among individual predictors, moral

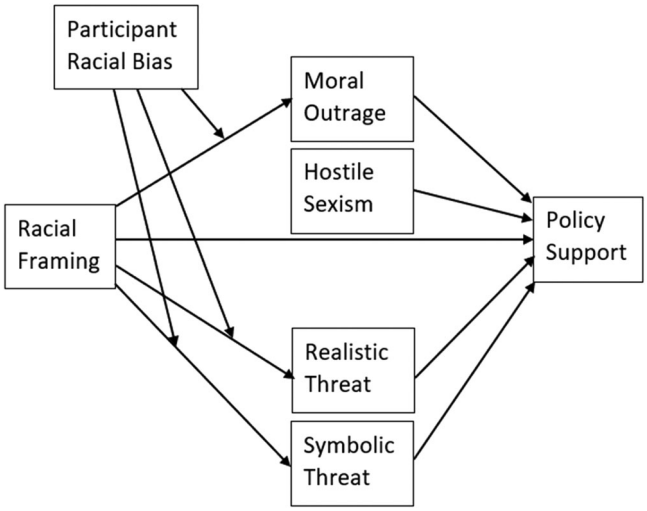


FIGURE 1 Conceptual model for the conditional indirect effects of framing on policy support via moral outrage, realistic threat, and symbolic threat.

outrage, $B = 0.530$, 95% CI_B [0.470, 0.589], $\beta = 0.719$, $p < .001$, and realistic threat, $B = 0.428$, 95% CI_B [0.258, 0.599], $\beta = 0.274$, $p < .001$, had unique positive relationships with abortion rights policy support. Hostile sexism had a unique inverse relationship with abortion rights policy support, $B = 0.428$, 95% CI_B [0.258, 0.599], $\beta = 0.274$, $p < .001$.

Independent samples *t*-test

An independent samples *t*-test was conducted with abortion rights policy support as the dependent variable and framing (nonracial vs. racial) as the independent variable. Levene's test showed that the equality of variances assumption was violated, $p = .005$. The *t*-test revealed that there was no significant effect of framing, $t(326.83) = 0.72$, $p = .472$. The means of the nonracial framing condition ($M = 5.63$, SD = 1.33) and the racial framing condition ($M = 5.51$, SD = 1.59) were not significantly different, 95% CI for the difference [−0.20, 0.43], as they differed by 0.078 standard deviations, Cohen's $d = 0.078$, 95% CI_D [−0.135, 0.291].

Conditional process analysis

A conditional process analysis was conducted using Hayes' (2013) PROCESS macro Model 8 with framing manipulation as the primary independent variable (x), participant racial bias as the moderator (w), and support for abortion rights policy as the ultimate dependent variable (y). Moral outrage (m1), realistic threat (m2), and symbolic threat (m3) were included as parallel mediators, and hostile sexism was added as a covariate (c). This model allowed for direct testing of the experimental hypotheses and is conceptually illustrated in Figure 1.

Conditional indirect effect via moral outrage. To test hypothesis H1a, the conditional indirect effect of framing on abortion rights policy support through moral outrage was examined. Note that, as PROCESS does not produce *p*-values for indirect effects, these effects are determined to be significant when the 95% confidence interval of the effect size does not include 0. The index of moderated mediation for the conditional indirect effect of framing on abortion rights policy

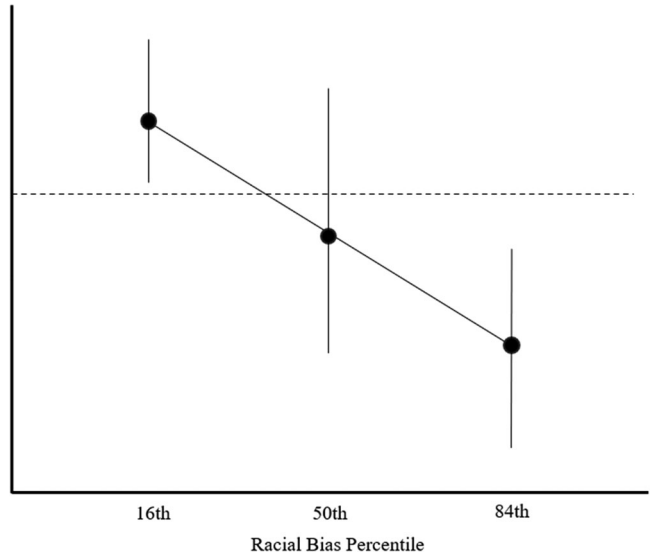


FIGURE 2 The conditional indirect effect of framing on policy support (y-axis) via moral outrage as a function of racial bias. Error bars represent 95% confidence intervals. Dashed horizontal line represents null effect.

support through moral outrage showed that 0 could be excluded as a possible value of the effect with 95% confidence, $B = -0.1920$, 95% CI_B [−0.3510, −0.0769]. Accordingly, H1a was supported.

Probing the indirect effect showed that participants with relatively low levels of racial bias (16th percentile) reported greater support for abortion rights policies via moral outrage in the racial framing condition, $B = 0.2229$, 95% CI_B [0.0154, 0.4727]. Conversely, participants with relatively high levels of racial bias (84th percentile) reported lower support for abortion rights policies via moral outrage in the racial framing condition, $B = -0.4355$, 95% CI_B [−0.7372, −0.1395]. The indirect effect through moral outrage was not significant for participants with moderate levels of racial bias (50th percentile), $B = -0.1337$, 95% CI_B [−0.460, 0.335]. The conditional indirect effect of racial framing on policy support at the 16th, 50th, and 84th percentiles of moral outrage is illustrated in Figure 2. Note that in this and other figures illustrating significant conditional indirect effects that the dotted line marked ".00" indicates an effect size of 0. The solid lines show how the indirect effect of framing through each of the tested mediators changes across levels of racial bias.

Conditional indirect effect via realistic threat. To test hypothesis H1b, the conditional indirect effect of framing on abortion rights policy support through realistic threat was examined. The index of moderated mediation for the conditional indirect effect of framing on abortion rights policy support through realistic threat showed that 0 could be excluded as a possible value of the effect with 95% confidence, $B = -0.0692$, 95% CI_B [−0.1345, −0.0357]. Accordingly, H1b was supported.

Probing the indirect effect showed that participants with relatively high levels of racial bias (84th percentile) reported lower support for abortion rights policies via realistic threat in the racial framing condition, $B = -0.1558$, 95% CI_B [−0.3083, −0.0357]. The indirect effect was not significant for participants with relatively low levels of racial bias (16th percentile), $B = 0.0815$, 95% CI_B [−0.0098, 0.2016], or for participants with moderate levels of racial bias (50th percentile), $B = -0.0471$, 95% CI_B [−0.1271, 0.0252]. This conditional indirect effect is illustrated in Figure 3.

Conditional indirect effect via symbolic threat. To test hypothesis H1c, the conditional indirect effect of framing on abortion rights policy support through symbolic threat was examined. The index of moderated mediation for the conditional indirect effect of framing on abortion rights policy support through symbolic threat showed that 0 could not be excluded as a possible value of the effect with 95% confidence, $B = 0.0146$, 95% CI_B [−0.0045, 0.0474]. Accordingly, H1c was not supported, and nonsignificant interactions are not probed.

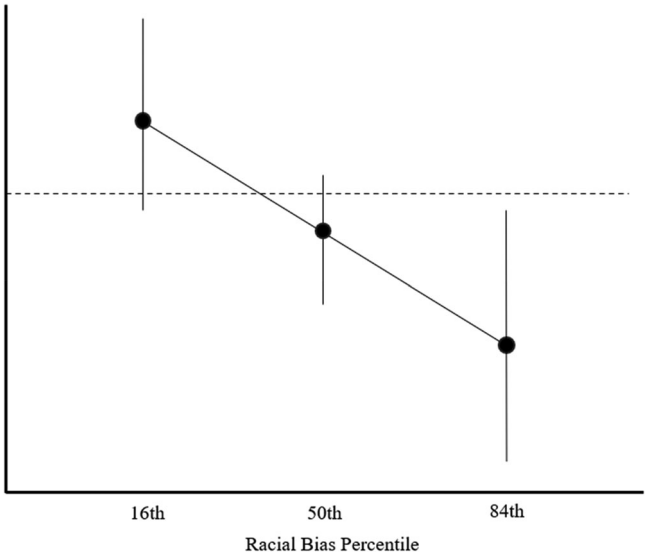


FIGURE 3 The conditional indirect effect of framing on policy support (y-axis) via realistic threat as a function of racial bias. Error bars represent 95% confidence intervals. Dashed horizontal line represents null effect.

Effect of hostile sexism. Within the overall model, the unique effect of hostile sexism on support for abortion rights policy was significant, $B = -0.1458$, 95% CI_B [−0.2264, −0.0652], showing that increased hostile sexism predicted reduced policy support in support of H1d.

Discussion

Experiment 1 conceptually replicated a conditional indirect effects model that was first validated in the context of the COVID-19 pandemic (Franks et al., 2022) by extending it to another public health policy area: abortion rights and maternal mortality. Based on Experiment 1, it seems likely that when the racial justice implications of a public health crisis are emphasized, there will be a large contingent of moderately and highly racially biased individuals who become less outraged and less threatened due to belief that the crisis is not likely to affect people like themselves, which will ultimately make them less likely to support policies to address that problem. There will also be a smaller group of individuals who are very low in racial bias (e.g., anti-racist) who will become more supportive of policies meant to address public health crises that are framed with a racial justice narrative. This could indicate the need for targeted messaging to people of differing values when promoting certain policies.

One thing that remains to be explored is whether these same conditional processes are able to affect decisions made at the individual level, such as the decision to deliver abortion services to individual patients, rather than when decisions are made at the group level, such as public health policy support.

EXPERIMENT 2

Experiment 2 was designed to examine whether the conditional process model that was extended to abortion policy in Experiment 1 could be further extended to the decision to provide abortion care to an individual patient. By manipulating the race of a patient, it becomes possible to test

whether the moral distress experienced by hypothetical abortion care providers is more detrimental for Black patients versus White patients, particularly among providers with anti-Black racial biases and via social-cognitive mediating processes.

Based on findings germane to Construal Level Theory, it is likely that different mechanisms will influence individual healthcare delivery decisions relative to broader health policy attitudes. Experiment 2 will help illuminate whether a low-level, individual-based mindset involves different conditional processes, potentially affecting abortion delivery decisions through different, less value-driven mediators. Specifically, in Experiment 2, participants will be tasked with placing themselves in the role of healthcare practitioners and indicate the likelihood of making hypothetical decisions to provide abortion services to a patient described as either White or Black, and the moderating effects of racial bias were tested through both value-based mediators (consistent with Experiment 1) and through more concrete mediators. To make the decision difficult, the patient's symptoms will be severe but not immediately life-threatening, and the ostensible legal status of abortion will be that it is practically banned. It is important that participants imagine themselves in the role of a healthcare provider because they need to identify with the legal and personal risks inherent in the decision.

Method

Power analysis

Using G*Power 3.1 and seeking to achieve power of .95 at $\alpha = .05$ for a regression-type model with up to eight predictors to detect small-medium effects ($F^2 = .08$), it was determined that the sample size should be at least 281 participants. However, individuals with high levels of racial bias may be underrepresented on mTurk, and thus we increased the sample size by 25%. Accordingly, the planned sample size for the study was 350.

Participants

Participants ($N = 347$, $M_{Age} = 41.73$, SD = 12.36) were recruited from Amazon's Mechanical Turk online workforce and paid 1 USD to complete an experiment hosted on Qualtrics. The sample was predominantly women (57.1%) with a large minority of men (42.7%) and only a single nonbinary/third gender individual (0.3%). The vast majority of participants identified as White (78.4%), with three minority groups comprising most of the rest of the sample: Black (8.4%), Latino/a/x (9.8%), Asian American (8.4%). Participants reported an average political orientation ($M = 3.60$, SD = 1.82) that was slightly below the center of a 7-point scale from Very Liberal (1) to Very Conservative (7).

Independent and dependent variables

Patient race. Participants were randomly assigned to read one of two passages of information asking them to imagine themselves as an obstetrician treating a patient who was described as either Black or White and experiencing severe abdominal cramping and vaginal bleeding late in her second trimester in a state where abortion is banned except when the life of the mother is in clear and immediate danger. See Appendix G for full details.

Willingness to perform abortion. Willingness to perform an abortion in the scenario described in the passage (where the legal and professional consequences could be severe) was measured with a single item: "To what extent would you be likely to perform the abortion for this patient in the scenario described on the previous page?" Participants responded to the item on a seven-point scale from 1–"Not at All Likely" to 7–"Completely Likely" ($M = 4.61$, SD = 1.735).

Mediators, moderators, and covariates

Participant racial bias (Cronbach's $\alpha = .922$; $M = 3.75$, SD = 1.59); **moral outrage** (Cronbach's $\alpha = .960$; $M = 5.10$, SD = 2.03); **realistic threat** (Cronbach's $\alpha = .910$; $M = 2.72$, SD = 0.10); **symbolic threat** (Cronbach's $\alpha = .925$; $M = 2.71$, SD = 1.01); and **hostile sexism** (Cronbach's $\alpha = .909$; $M = 3.17$, SD = 1.69) were all measured exactly as they were in the previous experiment.

Perceived risk. Perceived professional risk of performing the abortion was measured with a single item: "To what extent do you perceive performing the abortion to be risky for your career in the described scenario?" Participants responded on a 1 "Not at all risky" to 7 "Extremely risky" scale ($M = 5.13$, SD = 1.53).

Perceived symptom severity. Perceived severity of patient symptoms was measured with a single item: "How severe do you perceive the patient's current symptoms to be?" Participants responded on a 1 "Not at all severe" to 7 "Extremely severe" scale ($M = 5.57$, SD = 1.21).

Procedure

Participants responded to recruitment materials posted on Amazon's Mechanical Turk online platform and, after choosing to participate, followed a link to the experiment hosted on Qualtrics. Participants then completed an informed consent document. Once informed consent was obtained, participants were randomly assigned to read one of the two passages and could not proceed until answering attention check items correctly. Next, participants responded to the dependent measure item and the items about symptom severity and risk. Next, participants completed the moral outrage items, realistic threat items, symbolic threat items, racial bias, and hostile sexism items in that order. Finally, participants were thanked for their time and given a completion code to enter on Mechanical Turk to receive payment. All research methodology was approved by the Institutional Review Board at the home institution of the second author.

Results

All analyses were completed using SPSS 29.0 for Windows.

Correlations

Pearson's zero-order correlation analyses were conducted between all pairwise combinations of willingness to perform the abortion, perceived career risk, perceived symptom severity, participant racial bias, moral outrage, realistic threat, symbolic threat, and hostile sexism. With the exception of perceived career risk (which was only related to willingness to perform the abortion and symbolic threat), all variables were correlated with each other at $p < .001$. Importantly,

TABLE 2 Experiment 2 correlations among key variables.

Variable	*M*	SD	1	2	3	4	5	6	7
1. Abortion	4.61	1.735	–						
2. P risk	5.13	1.526	−.217	–					
3. P symp	5.57	1.205	.458	−.002	–				
4. R threat	2.72	0.938	.319	.091	.322	–			
5. S threat	2.71	1.006	.294	.134	.298	.803	–		
6. Outrage	5.10	2.031	.402	.088	.378	.754	.747	–	
7. Racial bias	3.75	1.589	−.247	−.091	−.321	−.558	−.468	−.637	–
8. H sexism	3.17	1.687	−.197	−.087	−.204	−.366	−.316	−.446	.533

willingness to perform the abortion was positively related to perceived career risk ($r = -.217$), perceived symptom severity ($r = .458$), moral outrage ($r = .402$), increased realistic threat ($r = .319$), and increased symbolic threat ($r = .294$) and inversely related to racial bias ($r = -.247$) and hostile sexism ($r = -.197$). Correlations are summarized in Table 2.

Multiple regression analysis

A multiple linear regression analysis was conducted with willingness to perform the abortion as the dependent variable and perceived career risk, perceived symptom severity, participant racial bias, moral outrage, realistic threat, symbolic threat, and hostile sexism as predictors. The full model predicted a significant 33.3% of the variance in willingness to perform the abortion, $F(8, 339) = 43.511$, $p < .001$. Among individual predictors, perceived symptom severity, $B = 0.502$, 95% CI_B [0.365, 0.639], $\beta = 0.349$, $p < .001$, and moral outrage, $B = 0.253$, 95% CI_B [0.117, 0.389], $\beta = 0.296$, $p < .001$, had unique positive relationships with willingness to perform the abortion. Perceived career risk had a unique inverse relationship with willingness to perform the abortion, $B = -0.275$, 95% CI_B [−0.376, −0.175], $\beta = -0.242$, $p < .001$.

Independent samples *t*-test

An independent samples *t*-test was conducted with willingness to perform the abortion as the dependent variable and patient race (White vs. Black) as the independent variable. Levene's test showed that the equality of variances assumption was not violated, $p = .458$. The *t*-test revealed that there was no significant effect of patient race, $t(346) = 0.527$, $p = .598$. The means of the White patient condition ($M = 4.66$, SD = 1.79) and the Black patient condition ($M = 4.56$, SD = 1.69) were not significantly different, 95% CI for the difference [−0.268, 0.464], as they differed by 0.057 standard deviations, Cohen's $d = 0.057$, 95% CI_D [−0.154, 0.267].

Conditional process analysis: Outrage and threat mediators

A conditional process analysis was conducted using Hayes' (2013) PROCESS macro Model 8 with patient race as the primary independent variable (x), participant racial bias as the moderator (w),

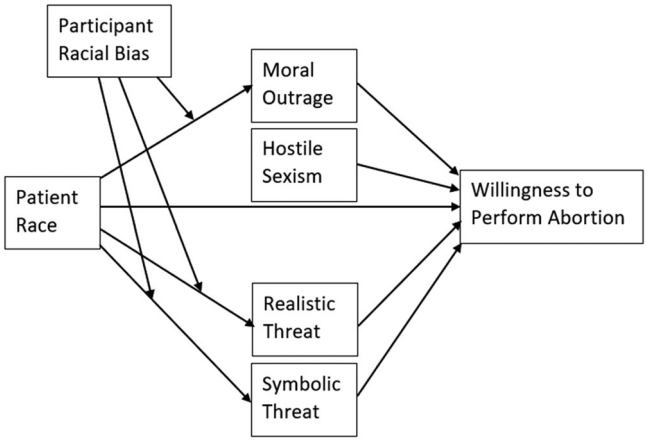


FIGURE 4 Conceptual model for the conditional indirect effects of patient race on willingness to perform an abortion via moral outrage, realistic threat, and symbolic threat.

and willingness to perform the abortion as the ultimate dependent variable (y). Moral outrage (m1), realistic threat (m2), and symbolic threat (m3) were included as parallel mediators, and hostile sexism was added as a covariate (c). This model allowed for direct testing of the experimental hypotheses H2a through H2d and is conceptually illustrated in Figure 4.

Conditional indirect effect via moral outrage. To test hypothesis H2a, the conditional indirect effect of patient race on willingness to perform the abortion through moral outrage was examined. The index of moderated mediation for the conditional indirect effect of patient race on willingness to perform an abortion through moral outrage showed that 0 could not be excluded as a possible value of the effect with 95% confidence, $B = -0.0125$, 95% CI_B [−0.0918, 0.0594]. Accordingly, H2a was not supported, and nonsignificant interactions are not probed.

Conditional indirect effect via realistic threat. To test hypothesis H2b, the conditional indirect effect of patient race on willingness to perform the abortion through realistic threat was examined. The index of moderated mediation for the conditional indirect effect of patient race on willingness to perform an abortion through realistic threat showed that 0 could not be excluded as a possible value of the effect with 95% confidence, $B = 0.0029$, 95% CI_B [−0.0200, 0.0326]. Accordingly, H2b was not supported, and nonsignificant interactions are not probed.

Conditional indirect effect via symbolic threat. To test hypothesis H2c, the conditional indirect effect of patient race on willingness to perform the abortion through symbolic threat was examined. The index of moderated mediation for the conditional indirect effect of patient race on willingness to perform an abortion through symbolic threat showed that 0 could not be excluded as a possible value of the effect with 95% confidence, $B = 0.0003$, 95% CI_B [−0.0266, 0.0264]. Accordingly, H2c was not supported, and nonsignificant interactions are not probed.

Effect of hostile sexism. Within the overall model, the unique effect of hostile sexism on willingness to perform the abortion was nonsignificant, $B = -0.0329$, 95% CI_B [−0.1532, 0.0875], showing that H2d was not supported.

Conditional process analysis: Risk and symptom severity mediators

A conditional process analysis was conducted using Hayes' (2013) PROCESS macro Model 8 with patient race as the primary independent variable (x), participant racial bias as the moderator (w), and willingness to perform the abortion as the ultimate dependent variable (y). Perceived

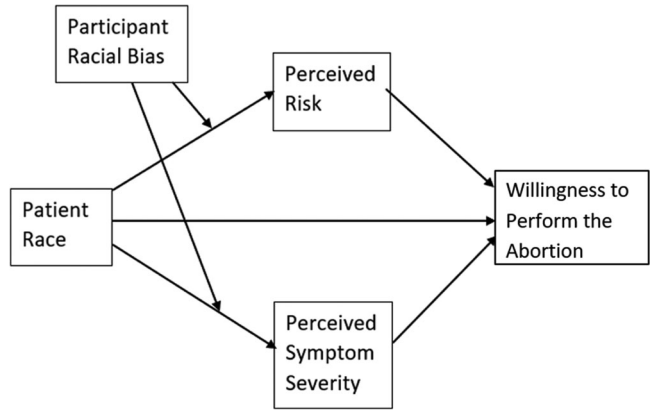


FIGURE 5 Conceptual model for the conditional indirect effects of patient race on willingness to perform an abortion via perceived career risk and perceived symptom severity.

career risk (m1) and perceived symptom severity (m2) were included as parallel mediators. This model allowed for direct testing of the experimental hypotheses H2e and H2f and is conceptually illustrated in Figure 5.

Conditional indirect effect via perceived career risk. To test hypothesis H2e, the conditional indirect effect of patient race on willingness to perform the abortion through perceived career risk was examined. The index of moderated mediation for the conditional indirect effect of patient race on willingness to perform an abortion through perceived career risk showed that 0 could not be excluded as a possible value of the effect with 95% confidence, $B = -0.0196$, 95% CI_B [−0.0765, 0.0366]. Accordingly, H2e was not supported, and nonsignificant interactions are not probed.

Conditional indirect effect via perceived symptom severity. To test hypothesis H2f, the conditional indirect effect of patient race on willingness to perform the abortion through perceived symptom severity was examined. The index of moderated mediation for the conditional indirect effect of patient race on willingness to perform the abortion through perceived symptom severity showed that 0 could be excluded as a possible value of the effect with 95% confidence, $B = -0.0962$, 95% CI_B [−0.1896, −0.0049]. Accordingly, H2f was supported.

Probing the indirect effect showed that participants with relatively high levels of racial bias (84th percentile) reported lower willingness to perform the abortion via perceived symptom severity in the Black patient condition, $B = -0.2765$, 95% CI_B [−0.5465, −0.0181]. The indirect effect was not significant for participants with relatively low levels of racial bias (16th percentile), $B = 0.0670$, 95% CI_B [−0.0971, 0.2381], or for participants with moderate levels of racial bias (50th percentile), $B = -0.0345$, 95% CI_B [−0.2524, 0.0486]. This conditional indirect effect is illustrated in Figure 6.

DISCUSSION

Experiment 2 failed to support the notion that the conditional process model validated in Experiment 1 and previous research (Franks et al., 2022) is generalizable to healthcare delivery decisions made at the concrete, individual level. Instead of patient race having conditional indirect effects on participants' willingness to perform abortions through broad public health concerns (i.e., feelings of outrage and threat at lack of abortion accessibility), the conditional indirect effects in Experiment 2 operated through individual-level concerns with the participant's own career risk and the individual patient's symptoms.

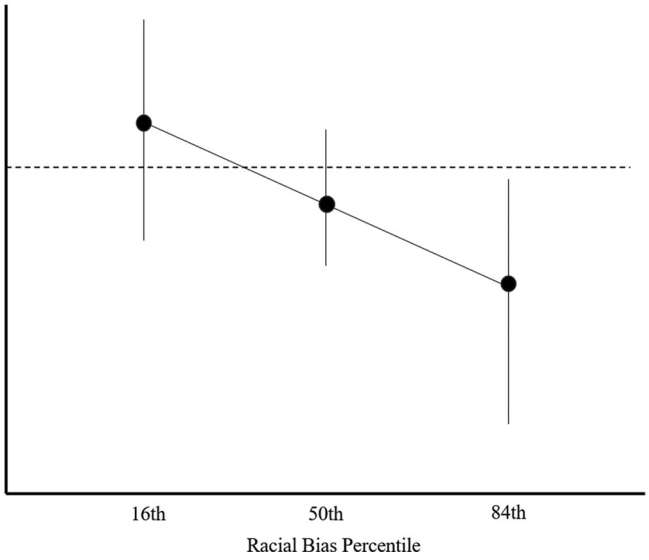


FIGURE 6 The conditional indirect effect of patient race on willingness to perform an abortion (y-axis) via perceived symptom severity as a function of racial bias. Error bars represent 95% confidence intervals. Dashed horizontal line represents null effect.

General discussion

The current research was designed to extend a previously established model that is relevant to the perpetuation of racial public health disparities (Franks et al., 2022). In that model, racial justice narratives in public health policy messaging indirectly reduce policy support through the mechanisms of reduced moral outrage and reduced perceived realistic threat among participants at normatively moderate and high levels of racial bias. The direction of the indirect effects is positive among anti-racist participants. That is to say that people who are normatively very low in racial bias became more likely to support abortion rights policies when racial justice issues were salient. Experiment 1 successfully generalized the model to a different public health context in abortion rights policy (vs. the original context of COVID-19 policy). Participants who were high in racial bias and exposed to information framing abortion rights from a racial justice perspective became less morally outraged and perceived less realistic threat from such restrictions and subsequently less likely to support abortion rights, while those very low in racial bias showed the opposite pattern. Previous research germane to integrated threat theory has supported the conceptual divergence of realistic threat and symbolic threat such that the two factors are often related to outcomes in opposite directions (e.g., Kachanoff et al., 2021) or one type of threat may not be involved in significant indirect pathways (e.g., Franks et al., 2022). Accordingly, the results of Experiment 1 are consistent with the established model.

However, Experiment 2 found an apparent boundary for the model such that it does not extend to individual-level healthcare delivery decisions. Instead, when a pregnant patient experiencing severe complications in a state where abortion is effectively banned is described as Black (rather than White), participants higher in racial bias became less willing to risk their own hypothetical career to provide the abortion through reduced subjective perceptions of symptom severity. These different patterns of findings in Study 2, compared to Study 1, are also generally consistent with predictions from the Construal Level Theory, and specifically research demonstrating that when individuals adopt abstract (i.e., policy) level thinking, their attitudes and decisions are more

aligned with their higher level values (such as moral outrage at injustices), compared to when they adopt concrete (i.e., individual) level thinking (e.g., Luguri et al., 2012).

In the contexts examined in this research, these patterns manifested as different psychological mechanisms that explained the conditional processes (e.g., through moral outrage in Experiment 1, but not in Experiment 2) at the boundaries of two theories. These findings have implications for public health policy and public health delivery that are substantial for communities with intersecting marginalized characteristics such as Black women and perhaps members of the LGBTQ community as well.

Implications

The implications of the current research suggest that targeting racial justice narratives to anti-racist audiences may enhance support for addressing broad public health crises that disproportionately impact communities of color (as all such crises tend to) via increased outrage and threat perceptions. However, audiences at moderate and high levels of racial bias may react with less outrage and feel less threatened when reminded that a public health crisis disproportionately impacts a minority group and, subsequently, become less supportive of addressing the crisis through changes in public policy. Unfortunately, a strategy of targeted messaging does nothing to reduce the already endemic racial biases, which cause additional harms. It also does not address the fact that treating an issue that disproportionately impacts minority groups in a race-blind manner runs the risk of deepening racial inequalities (e.g., Edwards & Darity, 2021). In the United States under Dobbs, this means that increases in the risk of maternal mortality more broadly will impact the Black community even more substantially and result in an egregious rise in maternal mortality among pregnant individuals who are Black or belong to other marginalized groups.

Assuming that biases operate similarly in the decisions of healthcare practitioners as in the more general sample used in the current research (e.g., Hoffman et al., 2016), the pattern of results found in Experiment 2 suggests that pregnant patients who are Black may be at additional maternal mortality risk when a healthcare provider's racial biases lead them to underperceive the severity of the patient's symptoms (e.g., Hoffman et al., 2016). Under Dobbs, physicians and other healthcare delivery professionals may feel moral distress (e.g., Rivlin et al., 2024) over the conflict between draconian abortion restrictions and their desire to provide life-saving abortion services, but this distress can be assuaged if the healthcare provider is able to perceive the patient's situation as less immediately dangerous. Such motivated cognitive processing is consistent with research on cognitive dissonance theory that shows clinical judgment can be compromised by self-protective distortions (Klein & McColl, 2019). Whether such distortions involve increased perceptions of career risk or decreased perceptions of symptom severity, delays in providing needed emergency abortion services will continue to cost the lives of those experiencing pregnancy complications.

Overall, the differences in findings between the two experiments underscore why we need to be conscious of how the level of processing (i.e., abstract vs. concrete) applies to attitudes and decisions involved in abortion related issues (e.g., policy vs. healthcare delivery). For example, our findings would suggest that while eliciting moral concerns and outrage might play a role in impacting support on a policy level (similar to findings from Eyal et al., 2008; Luguri et al., 2012), when even the same individuals are faced with a real human being in front of them, such value-based processes may be trumped by other more immediate concerns, such as symptom severity.

Limitations and future directions

The present research is limited in several notable ways. First, both studies used nonrepresentative convenience samples. These samples were taken from a digital online workforce that tends to be younger, more educated, more liberal, and slightly less racially diverse than the general population. This is an issue in the context of Experiment 1 because public policy attitudes are an outcome that researchers want to generalize broadly to the entire population of Americans. Fortunately, the samples used are more similar to the general population than other widely used convenience samples in psychological research, such as undergraduate students.

On the other hand, a younger, more educated, and more liberal sample is likely a benefit for Experiment 2, where the broader population of interest was physicians and other medical professionals who make choices about delivery of abortion services. In this case, our sample could have been improved by specifically recruiting medical students, physicians, or other healthcare delivery professionals. However, previous research has shown that racial biases operate similarly in physicians and medical students as they do in other individuals (e.g., Hoffman et al., 2016). The amount of funding available for this research allowed for recruitment of a sample that is closer to that of the general population than college students are, but less specialized to the medical field as would be optimal for Experiment 2. Future research on this topic would be improved by representative random sampling for issues that researchers want to generalize to very broadly and for sampling of current or future medical professionals for issues that researchers want to generalize within that field.

The present research is also limited by the number of factors that were held constant but that might influence outcomes. For instance, in Experiment 2, both the degree to which abortion was restricted and the symptoms of the patient were held constant. It is likely that variation in laws and symptom severity would affect outcomes. For the purposes of the current research, we consider maximizing the potential legal and professional ramifications of performing the abortion and achieving an ideal level of ambiguity in terms of the danger in the symptoms to be a strength of the design. However, future research could endeavor to manipulate legal restrictions and patient symptoms as independent variables.

Some may argue that additional methodological limitations include the use of mediational analyses on cross-sectional data and the measurement of mediators after dependent variables. However, we strongly contend that the use of mediational analyses on cross-sectional data is appropriate when mediational relationships are supported by theory, prior research, and a priori hypotheses (e.g., Hayes, 2013). Further, we assert that mediational variables can be affected in sequence while being measured out-of-sequence. Sometimes, it is prudent to do so, such as when responding to dependent measures requires immediate knowledge of information presented during a manipulation.

Experiment 2 is also limited by the very hypothetical nature of the final outcome, which most certainly allowed for participants to overestimate their courage in facing the moral distress of the situation. The average participant answered 4.6 on a scale of 7, willingness to perform an abortion in a potentially career-threatening and legally pernicious situation. Such a level of willingness is not evident in the real world, where pregnant patients with highly dangerous complications in many US states are dying while their physicians delay or refuse to provide abortion care or futilely wait for approval from judges. Therefore, it would seem that Experiment 2 underestimates the increased maternal mortality risks to Black women under Dobbs.

Finally, future research on this and similar topics should take Construal Level Theory into account in order to examine under what circumstances individuals make public health-related decisions using abstract versus concrete reasoning.

CONCLUSION

Public health crises consistently have disproportionate impacts on communities of color in the United States. It is important to recognize the psychological processes and biases that are involved in shaping the immediate attitudes and decisions that individuals make, which may contribute to exacerbating racial inequalities in public health. In a post-Dobbs world, Black women will be particularly susceptible to increased maternal mortality and other negative outcomes associated with abortion restrictions. To save lives and prevent increased racial injustice, it is important to find interventions and advocate for policies that will make abortion services more accessible to anyone who needs them.

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to report.

DATA AVAILABILITY STATEMENT

The experimental hypotheses were as follows, and all hypotheses, methodology, and analyses for both studies were preregistered and data are available at https://osf.io/7ztj2/.

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APPENDIX A: Passages for framing manipulation

Nonracial justice condition

Due to a lack of universal healthcare and restrictions on reproductive healthcare access (particularly abortion), the maternal mortality rate in the US has been the highest among all major industrialized countries for more than two decades. Data from UNICEF and the World Health Organization suggest that as of 2020, the United States, with 21 maternal deaths per 100,000 live births, was on par with much poorer nations such as Malaysia and Lebanon. Maternal mortality in the United States had already more than doubled from 1999 to 2019 as many states found ways to subvert the protections afforded by Roe v. Wade and restrict funding for reproductive healthcare providers. Less than 2 years since the Supreme Court's Dobbs v. Jackson decision eliminated federal abortion rights protections, the United States' maternal mortality crisis has become even

worse: the maternal mortality rate climbed to 32.9 deaths per 100,000 births, which is 10 times higher than in other wealthy nations such as Australia, Sweden, Denmark, and Japan.

Abortion rights are a defining gender issue. The effects of the Dobbs decision and loss of federal abortion rights protections have been largely concentrated in states that moved quickly to enact anti-abortion restrictions. In those states, the maternal mortality rate has increased from 51.9 to a staggering 65.1 per 100,000. Not only is the rate much higher than the mortality rate in states that protect abortion rights, but the rate is increasing much faster within those states as well.

Approximately 22 million women and girls of reproductive age in the US now live in states where abortion access is heavily restricted, and often totally inaccessible. Abortion bans also reduce the quality and availability of other forms of necessary reproductive healthcare, such as contraception, pre- and postnatal care, and preventative annual exams. One reason for this is that the reproductive healthcare clinics that provide this treatment are often financially unable to stay open when abortion services become illegal. Anti-abortion legislation also has a chilling effect on patients' access to healthcare services more broadly.

Racial justice condition

Due to a lack of universal healthcare and restrictions on reproductive healthcare access (particularly abortion), the maternal mortality rate in the US has been the highest among all major industrialized countries for more than two decades. Data from UNICEF and the World Health Organization suggest that as of 2020, the United States, with 21 maternal deaths per 100,000 live births, was on par with much poorer nations such as Malaysia and Lebanon. Maternal mortality in the United States had already more than doubled from 1999 to 2019 as many states found ways to subvert the protections afforded by Roe v. Wade and restrict funding for reproductive healthcare providers. Less than 2 years since the Supreme Court's Dobbs v. Jackson decision eliminated federal abortion rights protections, the United States' maternal mortality crisis has become even worse: the maternal mortality rate climbed to 32.9 deaths per 100,000 births, which is 10 times higher than in other wealthy nations such as Australia, Sweden, Denmark, and Japan.

Abortion rights are a major racial justice issue. The effects of the Dobbs decision and loss of federal abortion rights protections have been even more staggering for Black women and other women of color. For Black pregnant women, the maternal mortality rate has increased from 51.9 to a staggering 65.1 per 100,000. Not only is the rate much higher than the mortality rate for White women, but the rate is increasing much faster among Black women as well.

Approximately 9 million Black and minority women and girls of reproductive age in the US now live in states where abortion access is heavily restricted, and often totally inaccessible. Abortion bans also reduce the quality and availability of other forms of necessary reproductive healthcare, such as contraception, pre- and postnatal care, and preventative annual exams, particularly among Black women and other minorities who are much more likely to be uninsured, underinsured, and unable to travel for care. This additionally contributes to racial disparities in pregnancy complications and other reproductive health issues.

APPENDIX B: Support for abortion rights

All items were answered on a 1 (Strongly Disagree) to 7 (Strongly Agree) scale.

1. Congress must act to pass a law restoring abortion rights protections at the federal level.
2. A pregnant person must have the right to terminate a pregnancy up until the point where the fetus can survive outside the womb.
3. The law should never treat a miscarriage as a potential "murder".

4. A person should never be forced to carry a nonviable pregnancy (one where the child will not survive past birth) to term.
5. Courts and politicians must remove themselves from reproductive healthcare decisions, such as whether to have an abortion, that should only involve people and their doctors.

APPENDIX C: Participant racial bias

All items were answered on a 1 (Strongly Disagree) to 7 (Strongly Agree) scale.

1. Black people should work for social advancement instead of receiving special favors.
2. The legacy of slavery continues to make things more difficult for Black people today.*
3. The United States has not done enough to make up for oppression of Black people.*
4. Black people need to take responsibility for their own situation.
5. I don't think there is any need for public policy meant specifically to help Black people.
6. The way the United States treats Black people is shameful.*
7. Though Black people were treated unfairly in the past, it is now Whites who are the victims of more racial discrimination.

*Indicates item was reverse-coded

APPENDIX D: Moral outrage

All items were answered on a 1 (Strongly Disagree) to 7 (Strongly Agree) scale.

1. It angers me when states enact new restrictions on abortion rights.
2. I was outraged by the Supreme Court decision that eliminated federal abortion rights protections.
3. It is morally wrong that it is becoming increasingly difficult to access abortion services in this country.

APPENDIX E: Integrated threat

All items began with the stem "To what degree do you think that restrictions on abortion rights are a threat to:" and were answered on a 1 (Not a threat) to 4 (Major threat) scale.

Realistic threat items

1. Individual health
2. Public health
3. Financial freedom and security
4. The economic stability of Americans
5. Day-to-day life in America

Symbolic threat items

1. The rights and freedoms of Americans
2. What it means to be American
3. American traditions and values
4. Political influence of Americans like me
5. The maintenance of law and order in American communities

APPENDIX F: Hostile sexism

All items were answered on a 1 (Strongly Disagree) to 7 (Strongly Agree) scale.

1. Most women interpret innocent remarks or acts as being sexist.
2. Women seek to gain power by getting control over men.
3. Women are too easily offended.

APPENDIX G: Patient symptom passages—including patient race manipulation

Changed wording for Black patient condition is in parentheses ().

As a practicing physician in Idaho, you are faced with a complex and distressing situation. Lauren (Latish) Smith, a 23-year-old White (Black) female, presents at your hospital with pregnancy complications that require immediate attention. She is currently 19 weeks along in her pregnancy, and her medical history includes chronic hypertension. Lauren (Latisha) is experiencing abdominal pain and vaginal bleeding. Upon examination, you determine that she is suffering from a placental abruption, a condition in which the placenta separates from the wall of the uterus prematurely. This can cause significant blood loss and has a high risk of miscarriage and a moderate risk of maternal mortality (death of the mother). The maternal mortality risk is elevated in patients with a history of hypertension.

Treatment options are bed rest or abortion of the pregnancy. In the current case, cesarean section is not possible because the fetus has not yet reached viability (i.e., it is not developed enough to survive outside of the womb even with medical intervention). Meanwhile, bed rest will provide some chance that the fetus survives, but also increase the risk of maternal mortality with each passing day that an abortion is not performed. Lauren (Latisha) is requesting an abortion. However, you are aware that the State of Idaho has some of the most restrictive abortion laws in the country. Since the Dobbs v. Jackson decision in June 2022, abortions have been banned in the state with very few exceptions. If you perform an abortion and cannot convince the authorities that Lauren (Latisha) was facing imminent death, there is a risk that you may be prosecuted and/or lose your medical license.

AUTHOR BIOGRAPHIES

Andrew Franks is a core faculty member in the Psy.D. program at the Michigan School of Psychology and also holds academic appointments at the University of Michigan and Central Michigan University. Formerly, Dr. Franks held faculty positions at University of Washington and Princeton University. His research examines issues at the intersection of social psychology and disciplines such as political science, public health, economics, and criminal justice in service of understanding and ameliorating social problems.

Y. Jenny Xiao is an assistant professor of psychology at the University of Washington Tacoma. Her research takes a social cognitive approach to understanding how social identities and intergroup processes can shape our perception, attitudes, and action, and provides broader implications for promoting positive intergroup relations and social justice.