



# Abortion Attitudes Across Cultural Contexts

## Exploring the Role of Gender Inequality, Abortion Policy, and Individual Values

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**Abstract:** We explored between-country and within-country variability in abortion attitudes, using country-level factors (e.g., gender equality) and individual-level factors (e.g., gender role attitudes) as predictors. Participants from Mexico ( $N = 215$ ), India ( $N = 215$ ), the United States ( $N = 215$ ), and the United Kingdom ( $N = 206$ ) were recruited via Qualtrics Panels. Regression models and ANOVAs were used to assess whether estimates of gender inequality, gender role attitudes, motherhood norms, belief in *big/moralizing* gods, and sexual strategy were associated with abortion attitudes. As predicted, individuals living in countries with greater gender inequality, and more restrictive abortion policy, reported more restrictive abortion attitudes and stronger support for banning abortion. Furthermore, individuals who endorsed more traditional gender role ideologies, who reported belief in *big/moralizing* gods and who used long-term sexual strategies also reported more restrictive abortion attitudes and stronger support for banning abortion. Exploratory analyses highlight how these relationships vary as a function of cultural context. We can conclude that both contextual factors (e.g., local abortion legislation and gender inequality) as well as individual factors (e.g., gender role attitudes and religious/spiritual belief) shape people's attitudes toward abortion. Implications regarding the bidirectional relationship between attitudes and policy in reproductive health are discussed.

**Keywords:** abortion attitudes, reproductive health, abortion legislation, gender roles, religious beliefs

**Impact and Implications:** Abortion attitudes matter—disapproving and judgmental attitudes toward abortion may create barriers to accessing needed abortion care as well as ostracism and stigma toward those receiving abortion care. Our findings, across the United States, the United Kingdom, India, and Mexico, demonstrate that achievement of gender equality (United Nations' SDG #5) and promoting well-being and healthy lives for all at all ages (SDG #3) will depend on addressing both individual beliefs (i.e., beliefs about supernatural punishment, attitudes about people's roles in society as a function of their gender, and attitudes about casual sex) and institutional structures (i.e., gender inequality and abortion legislation) that stand against safe and accessible abortion care for all.

Abortion access is radically transformative for individuals and communities. A scoping review by Rodgers et al. (2021) revealed that increased ability to access abortion care is associated with a multitude of macroeconomic outcomes, including improved physical wellbeing (e.g., decreased risk of maternal mortality and morbidity), increased labor force participation and educational attainment for women, socioeconomic security, and improved family functioning as evidenced by several indicators of children's wellbeing (e.g., parent-child closeness, school drop-out rates, high school graduation rates, parental investment in children's education). The relationship between abortion access and physical, social, relational, and economic wellbeing, especially for women and girls, positions abortion care as relevant to UN Sustainable Development Goals 3 ("ensure healthy lives and promote well-being for all ages") and 5 ("achieve gender equality

and empower all women and girls;" United Nations, 2023). Though the benefits of increasing abortion access (through liberalizing abortion laws and regulations) are clear, there is still tremendous variability in abortion legislation both within and between countries (Center for Reproductive Rights, 2024). There are several contexts where structural and social support for abortion care is improving (e.g., referendum vote to repeal the Eighth Amendment in Ireland, ratification of the Maputo Protocol by the African Union); however, in many places, access to safe and legal abortion care is severely limited (e.g., parliamentary rejection of several bills designed to increase access to legal abortion in Poland, overturning *Roe v. Wade* in the United States; Calkin & Kaminska, 2020; *Dobbs v. Jackson*, 2022; Remez et al., 2020). This research explored how variability in abortion legislation may be related to abortion attitudes, asking why and how do judgments about

abortion vary across cultural contexts? In doing so, this work applied social control theory and a cultural evolution framework to examine the relationship between country-level factors (i.e., abortion legislation, gender inequality) and individual-level factors (e.g., gender role attitudes) in shaping support for/opposition to abortion.

## Abortion Attitudes Matter

Individual judgments about abortion are very consequential; they affect other people (e.g., felt stigma), social systems (e.g., the establishment and maintenance of norms), and broader structures (e.g., healthcare provisioning and legislation) that shape the extent to which people are free to control their own reproductive futures. Attitudes influence how people considering, seeking, and accessing abortion care feel; specifically, feeling judged or stigmatized for an abortion decision has been associated with secrecy, isolation, and psychological distress (Hanschmidt et al., 2016). A cultural evolution framework theorizes that attitudes toward a particular behavior are created by and maintained by norms about that behavior (Gelfand et al., 2024; Opp, 2001). As such, antiabortion attitudes likely reflect and maintain norms that stand in opposition to abortion (e.g., the expectation that women should be sexually chaste and therefore not experience unplanned pregnancy). Abortion attitudes also predict the extent to which people can access needed abortion care (e.g., stigma reduces the likelihood that practitioners will offer abortion services; Razon et al., 2022). While supportive abortion attitudes can produce legislative change (through voting behavior) that broadens the conditions under which a pregnant person can legally access abortion care (Elkink et al., 2020), the relationship between abortion legislation and abortion access is complex. Antiabortion attitudes can act as barriers to accessing care in places where abortion is legal or has recently become legal. As an example, following a recent referendum in Ireland, wherein an amendment in the Irish constitution prohibiting abortion (except to save the life of the pregnant person) was repealed, general practitioners (37% of those surveyed) have reported a persistent unwillingness to provide legal abortion care to their patients (O'Connor et al., 2019).

There is a complex, bidirectional relationship between reproductive healthcare institutions (laws, clinics) and individuals, such that institutions can shape public opinion and public opinion can shape institutions (Adamczyk et al., 2020). Social control theory captures the nature of this relationship, highlighting the reciprocal process wherein regulatory and legislative mechanisms reflect and reinforce norms and social values, including norms that position women and people with uteruses as innately maternal (see Doan & Schwarz, 2020). In the extent to

which legislation acts to formalize norms and values, disapproving and stigmatizing attitudes toward abortion may create conditions where restrictive abortion legislation is more likely to be put in place. Indeed, some research has shown that changes in social values precede relevant legislative and regulatory changes (i.e., Gallup results preceding *Roe v. Wade*; Uslander & Weber, 1979).

Restrictive legislation can also act to perpetuate or reinforce disapproving attitudes toward abortion. By criminalizing abortions in certain contexts (e.g., at certain gestational states) and not others (e.g., when the pregnant person's life is in danger), legislation places differential social value on the circumstances under which an abortion may take place, potentially reinforcing disapproving attitudes toward abortion in these circumstances. Indeed, research demonstrated that the circumstances wherein participants agree it *should* be illegal to access abortion are, in fact, the circumstances under which abortion was currently criminalized (i.e., after 12 weeks' gestation, due to gender preferences; Jozkowski et al., 2023). Given the relevance of abortion attitudes to the structural and social systems that constrain or liberate access to abortion care, it is critical to explore abortion attitudes across these different cultural contexts. A reproductive justice framework underscores the role that these structural and social systems play in shaping reproductive freedom and agency (Ross, 2017), highlighting the relationship between the social contexts in which someone exists (e.g., the extent to which they are marginalized, controlled, and disempowered in these contexts) and their ability to exercise reproductive choice. Through understanding how support for/opposition to abortion is shaped by individual values as well as contextual factors, we can begin to recognize potential pathways for facilitating reproductive freedom.

## Predicting Abortion Attitudes

A large body of literature explores how abortion attitudes vary between individuals, showing that older people, more religious people, more conservative people (e.g., acceptance of inequality, support for the status quo), people with less formal education, and those who more strongly endorse traditional, sexist gender role attitudes are particularly likely to oppose abortion (Osborne et al., 2022). A small, but growing, body of literature explores how abortion attitudes vary across cultural contexts, revealing that people living in places with more restrictive abortion legislation (Loll & Hall, 2019), living in cultures where religion is considered more important (Adamczyk, 2022), living in cultures where survival values and security are more highly valued (as opposed to self-expression; Adamczyk, 2013), and living in countries with unequal

representations of men and women in the workforce (Fernandez et al., 2023) are more likely to oppose abortion. We contribute to a gap in this literature through (a) employing a more complex measure of abortion attitudes and (b) including belief and attitudinal predictor variables that have not yet been sufficiently addressed in the extant literature on abortion attitudes.

Cross-cultural or cross-national models of abortion attitudes tend to measure these attitudes in oversimplified ways, such as utilizing single-item or brief measures, and these measures either do not include the different contexts under which abortion occurs (Adamczyk, 2013, 2022; Jelen, 2014) or only differentiate between certain contexts (e.g., *elective* vs. *traumatic* abortion, disability/illness vs. low income; Fernandez et al., 2023; Smith et al., 2020). As such, many contemporary cross-cultural or cross-national investigations of abortion attitudes fail to capture important variability in abortion judgments (see Jozkowski et al., 2018). To address this gap in the literature, our analysis of abortion attitudes employed a vignette approach to assess support for abortion in several contexts.

Studies of individual differences in abortion attitudes have underexplored the predictive value of a few key factors. For example, while theories of abortion attitudes (e.g., social learning and social control theories) often cite norms about motherhood as central to opposition to abortion and abortion stigma (Kumar et al., 2009; Russo, 1976), little empirical work has been devoted to exploring this relationship (see Osborne et al., 2022). While some work shows that sexual strategy (i.e., attitudes toward casual sex) may predict attitudes toward various social issues (e.g., recreational drugs, pornography, sex education, same-sex/gender marriage) better than political affiliation/orientation (Kurzban et al., 2010), the relationship between sexual strategy and abortion attitudes has been underexplored. This study is designed, in part, to further elucidate relationships between norms and expectations about motherhood (e.g., women feel *incomplete* without children), sexual strategy (e.g., attitudes about and desires for casual sex), and abortion attitudes.

Finally, while research consistently has shown that religiosity is negatively related to support for abortion (Adamczyk, 2013; Barkan, 2014), this research often failed to capture important between-religion variability in abortion attitudes. Some research findings have shown that practitioners of some Christian sects (e.g., Catholicism) were particularly likely to oppose abortion, compared to practitioners of Islam and Judaism (Osborne et al., 2022), but this may vary as a function of cultural context (Jelen et al., 2017; Selebal-Bereng & Patel, 2019). Which specific aspects of belief contribute to these social values (i.e., support for/opposition to abortion) have yet to be sufficiently explored. Some research has demonstrated

that attitudes about sexual morality (e.g., sex outside of marriage) and attitudes about the value and sanctity of human life may be important drivers of the relationship between religiosity and abortion attitudes (Jelen, 2014; Lockhart et al., 2023). Applications of a cultural evolution framework have identified relationships between belief in supernatural punishment and social attitudes (e.g., prosociality, pronatalism, suppression of self-interest; Norenzayan et al., 2016), as such we proposed that endorsement of supernatural punishment (e.g., believing in god/gods who punish *wicked* or immoral people, termed *Big Gods*) would shape support for/opposition to abortion.

Through applications of social control theory and a cultural evolution framework, we propose that constraints on reproductive freedom are shaped by interrelated individual-level (e.g., personal attitudes and beliefs) and country-level processes (e.g., gender equality and reproductive legislation). It was hypothesized that specific individual-level factors (e.g., belief in moralizing gods, long-term sexual strategies, motherhood norms, and traditional ideologies about gender roles) and country-level factors (e.g., more restrictive abortion policy and greater gender inequality) factors would predict more restrictive abortion attitudes.

Hypotheses:

*H1*: Individuals living in countries with greater gender inequality would report more restrictive abortion attitudes.

*H2*: Individuals with more sexist gender role attitudes (*H2a*), who perceive essentializing motherhood norms (*H2b*), who more strongly endorse Big God beliefs (*H2c*), and who have a more long-term sexual strategy (*H2d*) would report more restrictive abortion attitudes.

*H3*: Individuals living in countries with more restrictive abortion policy would report more restrictive abortion attitudes.

We have also included exploratory analyses to address the following question: Does the relationship between key predictors (i.e., gender role attitudes, motherhood norms, Big God beliefs, sexual strategy) and abortion attitudes differ according to cultural context?

## Method

### Participants

General population samples of individuals living in Mexico ( $N = 215$ ), India ( $N = 215$ ), the United States ( $N = 215$ ), and the United Kingdom ( $N = 206$ ) were recruited using

**Table 1.** Distribution of sociodemographic variables across the four cultural contexts (India, Mexico, the United Kingdom, and the United States)

Demographic variables	India		Mexico		The United Kingdom		The United States	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Sex								
Male	126	58.6%	101	47%	98	47.6%	56	26%
Female	89	41.4%	114	53%	108	52.4%	159	74%
Age								
	33.86 (10.81)		37.35 (13.33)		45.74 (16.34)		49.43 (15.30)	
Education:								
Some primary education	2	.9%	—	—	2	1%	1	.5%
Completed primary education	2	.9%	5	2.3%	3	1.5%	2	.9%
Some secondary education	2	.9%	2	0.9%	10	4.9%	11	5.1%
Completed secondary education	17	7.9%	25	11.6%	74	35.9%	54	25.1%
Some technical training	3	1.4%	10	4.7%	9	4.4%	9	4.2%
Completed technical training	8	3.7%	27	12.6%	32	15.5%	19	8.8%
Some university education	43	20%	36	16.7%	22	10.7%	54	25.1%
Completed university education	138	64.2%	110	51.2%	54	26.2%	65	30.2%
Religiosity								
Yes	149	69.3%	141	65.6%	57	27.7%	122	56.7%
No	64	29.8%	74	34.4%	149	72.3%	93	43.3%
Political ideology								
Conservative – Liberal	.71 (.233)		.59 (.24)		.51 (.25)		.50 (30)	
Relationship status								
Single	62	28.8%	40	18.6%	75	36.4%	72	33.5%
Dating one person, casual	7	3.3%	9	4.2%	3	1.5%	1	.5%
Dating one person, committed	7	3.3%	—	—	35	17%	28	13%
Dating multiple people, casual	1	.5%	27	12.6%	1	.5%	2	.9%
Dating multiple people, committed	—	—	—	—	1	.5%	1	.5%
Married or common law	135	62.8%	130	60.5%	85	41.3%	90	41.9%
Widowed	3	1.4%	3	1.4%	5	2.4%	18	8.4%
Other (if in a relationship)	—	—	5	2.3%	1	.5%	3	1.4%
Sexual orientation								
Heterosexual	158	73.5%	195	90.7%	192	93.2%	191	88.8%
Gay/Lesbian	2	.9%	5	2.3	4	1.9%	10	4.7%
Bisexual	32	14.9%	11	5.1	6	2.9%	12	5.6%
Asexual	12	5.6%	3	1.4	2	1%	1	.5%
Other	9	4.2%	1	.5	1	.5%	1	.5%

Qualtrics Panels (incentivized at £4 per completion) in March 2022 (please refer to Table 1 for a breakdown of sociodemographic variables across cultural context). Research protocols were designed to adhere to APA and BPS ethical guidelines and were reviewed and approved by the first author's research ethics committee [Brunel University College of Health, Medicine, and Life Sciences Research Ethics Committee]. Informed consent procedures were used to share the purpose and procedure of the study with potential participants. Participants reported an average age of 41 years ( $SD = 15.39$ ), 45% were women and

54% were men (4 nonresponse and one identified as nonbinary), most had at least some university-level education (18% started and 43% had completed a degree at university), were heterosexual (87%), married (52%), and had children (66%). Participants represented a range of political attitudes (13% conservative, 12% somewhat conservative, 27% moderate, 18% somewhat liberal, and 30% liberal). Power analysis based on effect sizes found in similar designs (Patel & Johns, 2009; Rye & Underhill, 2019) showed that a sample size of 200 participants and an  $\alpha$  level of 0.05 would provide sufficient power to detect

**Table 2.** Descriptive statistics and Pearson's correlations

	1	2	3	4	5	6
1. Gender role attitudes	—					
2. Belief in Big Gods	-.36**	—				
3. Motherhood norms	-.41**	.33**	—			
4. Sexual strategy	-.13**	-.15**	-.03	—		
5. Supportive abortion attitudes	.16**	-.28**	-.12**	.26**	—	
10. Opposed to banning abortion	.41**	-.46**	-.27**	.18**	.64**	—
<i>n</i>	851	851	851	850	851	850
<i>M</i>	3.66	3.32	2.95	2.33	7.18	4.25
<i>SD</i>	.68	1.36	.62	.81	4.22	2.18

Note. \* $p < .05$ . \*\* $p < .001$ .

the proposed effects (i.e., power estimate of approximately  $1 - \beta \approx 0.80$ ) within each sampled country. A total sample size of 851 was obtained, to ensure a sample of 200 per country after any participant attrition. As all participants consented for their data to be stored and shared, data and syntax are available via Figshare (Adair, 2023a, 2023b).

## Materials and Procedure

Participants were first given a brief demographic survey and then completed a series of brief questionnaires in the order presented below. For descriptive statistics and bivariate correlations, see Table 2. All materials were presented in the respective dominant languages of each country (Spanish for Mexico, Hindi for India, and English for the United States and the United Kingdom); translations were completed by the professional translation services provided by Qualtrics. Demographic questions assessed participants' age, sex/gender, education level, religiosity, relationship status, and sexual orientation. To assess political ideology, participants were asked, using a single-item measure (Malka et al., 2014), to indicate which best represents their political views on a scale from conservative (0) to liberal (1), such that lower scores denoted more conservative political ideology whilst higher scores denoted more liberal political ideologies. We used two estimates of country-level factors that were obtained from published sources; first, gender inequality using the gender inequality index [GII], which is a continuous metric that ranges from 0.00 to 0.90 and is calculated using country-wide data about reproductive health, participation in the labor market, participation in education, and representation in politics (Human Development Reports, 2022). Second, abortion legislation is represented with a categorical metric that captures the conditions that must be met for someone to access abortion (e.g., "to save the life of a pregnant person;" Remez et al., 2020). We used this

metric to categorize the four national contexts into three groups: least restrictive (to save the life of a pregnant person, to preserve physical or mental health, and/or on socioeconomic grounds; India and the United Kingdom), moderately restrictive (primarily restricted for gestational reasons; the United States), and most restrictive (to save the life of a pregnant person; Mexico).

## Abortion Attitudes

To assess abortion attitudes, we employed an adapted version of the multidimensional vignette created by Hans and Kimberly (2014). Participants read a short vignette describing a person considering abortion in a variety of contexts (e.g., health concerns for the pregnant person, fetal abnormality, career and romantic relationship concerns) and are asked to indicate whether (0 *no* or 1 *yes*) the pregnant person should be allowed to access abortion. A composite was created by summing responses across all 11 vignettes. Therefore, larger values on this item indicate more supportive attitudes toward abortion, while smaller values indicate more restrictive or disapproving attitudes ( $\alpha = .95$ ; Mexico  $\alpha = .95$ ; the United Kingdom  $\alpha = .94$ ; India  $\alpha = .92$ ; the United States  $\alpha = .97$ ). Abortion attitudes were also assessed using a single, face-valid item (from Kurzban et al., 2010). Participants were asked to indicate the extent to which they support (1 *totally support* to 7 *totally oppose*) legislation to ban abortion—as such, larger values on this item indicate more supportive abortion attitudes.

## Gender Role Attitudes

Participants' gender role attitudes were assessed using the Gender Role Attitudes Scale (Garcia-Cueto et al., 2015). This scale assesses attitudes about the roles and expectations of others, as a function of their gender/sex (e.g., "People should be treated equally, regardless of their sex," "Household chores should not be allocated by sex"). Responses ranged from 1 *totally agree* to 5 *totally disagree* and were averaged to create a composite score ( $\alpha = .89$ ;

Mexico  $\alpha = .86$ ; the United Kingdom  $\alpha = .87$ ; India  $\alpha = .86$ ; the United States  $\alpha = .88$ ). Larger values are indicative of more transcendent or egalitarian gender role attitudes.

### Motherhood Norms

To assess norms about motherhood—specifically that motherhood is prescribed for people who identify as women and is central to women’s identity (Russo, 1976)—we adapted five items from Park and Wonch Hill (2014) used to assess the importance of motherhood in an individual’s life. We adapted the phrasing of items to include normative language, with participants prompted to consider “women in their community, and how they think and feel” (e.g., “Most women would feel incomplete without children,” “Most women think their lives would be or are more fulfilling with children”). Responses ranged from 1 *strongly agree* to 4 *strongly disagree* and were averaged to form a single composite score (as in Park & Wonch Hill, 2014). Larger values indicate a strong emphasis on the importance of motherhood to women ( $\alpha = .82$ ; Mexico  $\alpha = .82$ ; the United Kingdom  $\alpha = .85$ ; India  $\alpha = .71$ ; the United States  $\alpha = .80$ ).

### Sexual Strategy

To assess sexual strategy—that is, the extent to which someone has positive attitudes about sex (e.g., “I can imagine myself comfortable and enjoying ‘casual’ sex with different partners;”  $\alpha = .74$ ; Mexico  $\alpha = .79$ ; the United Kingdom  $\alpha = .75$ ; India  $\alpha = .63$ ; the United States  $\alpha = .80$ ), frequent sexual desires (e.g., “How often do you have fantasies about having sex with someone you are not in a committed romantic relationship with?;”  $\alpha = .87$ ; Mexico  $\alpha = .86$ ; the United Kingdom  $\alpha = .86$ ; India  $\alpha = .88$ ; the United States  $\alpha = .89$ ), and engages in casual sex (e.g., “With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?;”  $\alpha = .77$ ; Mexico  $\alpha = .78$ ; the United Kingdom  $\alpha = .66$ ; India  $\alpha = .91$ ; the United States  $\alpha = .73$ ), the Revised Sociosexuality Inventory (SOI-R; Penke, 2011) was used. While the three domains of sexual strategy can be used as separate subscales, sexual strategy can also be reported as a single composite score. As such, responses were averaged across these items such that larger values indicate a more casual, short-term sexual strategy ( $\alpha = .85$ ; Mexico  $\alpha = .85$ ; the United Kingdom  $\alpha = .85$ ; India  $\alpha = .85$ ; the United States  $\alpha = .86$ ).

### Belief in Big Gods

Finally, to assess belief in big or moralizing gods, we adapted five items from Laurin et al. (2012) and Johnson (2005) that ask participants to consider the extent to which (1 strongly disagree to 5 strongly agree) they believe that god or some supreme/spiritual being intervenes in human

affairs (e.g., “I believe that God, or some other type of spiritual being, punishes those that have done wicked or immoral things,” “. . . rewards those that are virtuous or have done moral things”). Items were averaged to form a single composite score such that larger values indicate stronger endorsement of big or moralizing god beliefs ( $\alpha = .94$ ; Mexico  $\alpha = .91$ ; the United Kingdom  $\alpha = .97$ ; India  $\alpha = .89$ ; the United States  $\alpha = .90$ ).

## Results

To test hypotheses 1 and 2, that country-level gender inequality (H1), gender role attitudes (H2a), motherhood norms (H2b), belief in Big Gods (H2c), and long-term sexual strategy (H2d) would predict more restrictive abortion attitudes, we conducted two hierarchical regression models with abortion attitudes and opposition to banning abortion as outcome variables (see Table 3). We entered a country-level indicator of gender inequality (gender inequality index [GII]) and relevant demographic factors (i.e., age, gender, religiosity, and political orientation) in the first step. Gender role attitudes, motherhood norms (e.g., the expectation that motherhood *completes* and *fulfills* women), belief in Big Gods, and sexual strategy

**Table 3.** Associations of country-level gender inequalities, demographic factors (age, gender, political orientation, and religiosity), gender role attitudes, motherhood norms, Big God beliefs, and sexual strategy with supportive abortion attitudes and opposition to banning abortion

Model	Supportive abortion attitudes			Opposed to banning abortion		
	<i>t</i>	$\beta$	<i>p</i>	<i>t</i>	$\beta$	<i>p</i>
<b>Step 1</b>						
GII	-2.63	-.10	.009	-9.71	-.36	<.001
Age	.20	.01	.844	1.03	.03	.303
Gender	-.16	-.01	.871	-1.38	-.04	.170
Religiosity	-7.50	-.26	<.001	-5.47	-.18	<.001
Political ideology	6.06	.21	<.001	6.03	.20	<.001
<i>R</i> <sup>2</sup>		.12	<.001		.20	<.001
<b>Step 2</b>						
Gender role attitudes	2.60	.10	.009	6.84	.24	<.001
Belief in Big Gods	-3.94	-.16	<.001	-7.16	-.26	<.001
Motherhood norms	-.35	-.01	.728	-.81	-.03	.417
Sexual strategy	6.20	.21	<.001	4.46	.14	<.001
$\Delta R^2$		.07	<.001		.14	<.001

Note. Supportive abortion attitudes ( $n = 833$ ) Step 1:  $F(5, 828) = 23.09$ ,  $p < .001$ , adjusted  $R^2 = .117$ ; Step 2:  $F(9, 824) = 21.92$ ,  $p < .001$ , adjusted  $R^2 = .184$ ; opposition to banning abortion ( $n = 832$ ) Step 1:  $F(5, 827) = 42.75$ ,  $p < .001$ , adjusted  $R^2 = .201$ ; Step 2:  $F(9, 823) = 47.68$ ,  $p < .001$ , adjusted  $R^2 = .336$ ; significant predictors are in bold.

**Table 4.** *M* and *SDs* of supportive abortion attitudes and opposition to banning abortion across country-level abortion policies

Policy	Supportive abortion attitudes (range of scores 0–11) <i>M</i> ( <i>SD</i> )	Opposed to banning abortion (range of scores 1–7) <i>M</i> ( <i>SD</i> )
Least restrictive ( <i>n</i> = 420)	8.06 (3.67) <sup>a,b</sup>	4.37 (2.14) <sup>c</sup>
Moderate restriction ( <i>n</i> = 215)	6.46 (4.80) <sup>a</sup>	4.34 (2.32)
Most restrictive ( <i>n</i> = 215)	6.20 (4.26) <sup>b</sup>	3.92 (2.09) <sup>c</sup>

Note. Least restrictive: To save life of pregnant person/preserve physical/mental health/on socioeconomic grounds; Moderate restriction: Primarily restricted for gestational reasons; Most restrictive: To save the life of the pregnant person. <sup>a,b,c</sup>=matching superscripts indicate a significant difference between group means ( $p < .05$ ).

were all entered in the second step. Our models significantly predicted variation in both abortion attitudes ( $F[9, 824] = 21.92, p < .001$ , adjusted  $R^2 = .18$ ) and opposition to banning abortion ( $F[9, 823] = 47.68, p < .001$ , adjusted  $R^2 = .34$ ).

As predicted, people living in countries with greater gender inequality reported more restrictive attitudes toward abortion and stronger support for banning abortion.<sup>1</sup> Furthermore, traditional or sexist gender role attitudes predicted more restrictive abortion attitudes and stronger support for banning abortion. Contrary to predictions, motherhood norms did not emerge as a significant independent predictor of abortion attitudes. As predicted, stronger endorsement of Big God beliefs and long-term sexual strategies were linked with more restrictive abortion attitudes and stronger support for banning abortion. To probe the relationship between Big God beliefs and abortion attitudes, two partial correlations were run, demonstrating that Big God beliefs are significantly related to support for banning abortion ( $r[466] = -.22, p < .001$ , 95% CI  $[-.12, -.32]$ ), but not abortion attitudes ( $r[466] = -.07, p = .155$ , 95% CI  $[-.05, -.16]$ ), after controlling for religiosity.

To test hypothesis 3 (see Table 4), that more restrictive country-level abortion policies would be associated with more restrictive abortion attitudes, one-way ANOVAs were used. Specifically, one-way ANOVAs were conducted with country-level abortion policy entered as the predictor and abortion attitudes and opposition to banning abortion as the outcome variables. Abortion policies were represented at three levels varying from most restrictive (in Mexico abortion is legal to save life of a pregnant person), moderately restrictive (in the United States, abortion is primarily limited for gestational reasons prior to the overturn of *Roe v. Wade*), to least restrictive (in the United Kingdom and India, abortion is legal to save the life of a pregnant person/preserve physical/mental health or on socioeconomic grounds).

Our analyses revealed a significant difference in abortion attitudes and opposition to banning abortion between individuals living in countries with different abortion policies (abortion attitudes:  $F[2, 848] = 19.01, p < .001, \eta^2 = .04$ ; support for banning abortion:  $F[2, 847] = 3.27, p = .038, \eta^2 = .01$ ). Bonferroni's test for multiple comparisons showed that the mean values of abortion attitudes were significantly different when comparing contexts where abortion is legal to save the life of the pregnant person, to preserve physical/mental health, or on socioeconomic grounds (the United Kingdom and India) and contexts where abortion is legal to save the life of a pregnant person (Mexico; abortion attitudes:  $p < .001$ , 95% CI  $[1.04, 2.70]$ ; support for banning abortion:  $p = .044$ , 95% CI  $[-.01, .88]$ ). Furthermore, mean values of abortion attitudes were significantly different when comparing contexts where abortion is legal to save the life of the pregnant person, to preserve physical/mental health, or on socioeconomic grounds (the United Kingdom and India) and contexts where abortion is primarily restricted for gestational reasons (the United States; abortion attitudes:  $p < .001$ , 95% CI  $[.78, 2.44]$ ; support for banning abortion:  $p > .05$ ). Overall, consistent with our predictions, participants living in countries with more progressive abortion legislation (the United Kingdom and India) reported more supportive/permisive abortion attitudes and stronger opposition to banning abortion, compared to participants living in contexts with more restrictive abortion legislation (the United States and Mexico).

As an exploratory analysis, we constructed separate regression models to see if the relationship between our individual-level predictors (i.e., gender role attitudes, Big God beliefs, motherhood norms, and sexual strategy) and our outcomes (i.e., abortion attitudes and opposition to banning abortion) would differ as a function of cultural context. We used Bonferroni corrections to set the  $\alpha$  level at the appropriate level to minimize Type I errors ( $p =$

<sup>1</sup> Two additional demographic variables predicted attitudes toward abortion and support for banning abortion. Identifying as more politically conservative was associated with more restrictive attitudes toward abortion and stronger support for banning abortion. To unpack the association between religiosity and the two outcome variables, we conducted independent sample *t*-tests. Religious ( $M = 6.09, SD = 4.36$ ) relative to nonreligious ( $M = 8.52, SD = 3.62$ ) participants had more restrictive attitudes toward abortion,  $t(847) = -8.73, p < .001$ . Similarly, religious ( $M = 3.69, SD = 2.14$ ) relative to nonreligious ( $M = 4.94, SD = 2.03$ ) participants reported stronger support for banning abortion,  $t(846) = -8.68, p < .001$ .

**Table 5.** Associations of demographic factors (age, gender, political orientation, and religiosity), gender role beliefs, motherhood norms, Big God beliefs, and sexual strategy with supportive abortion attitudes and opposition to banning abortion in Mexico

Model	Supportive abortion attitudes			Opposed to banning abortion		
	<i>t</i>	$\beta$	<i>p</i>	<i>t</i>	$\beta$	<i>p</i>
<b>Step 1</b>						
Age	−1.73	−.12	.085	−2.41	−.17	.017
Gender	−.54	−.04	.590	−1.44	−.10	.151
<b>Religiosity</b>	−2.49	−.17	.014	−2.73	−.18	.007
<i>Political orientation</i>	.46	.03	.647	1.98	.13	.049
<i>R</i> <sup>2</sup>		.04	.018		.09	<.001
<b>Step 2</b>						
<i>Gender role attitudes</i>	1.87	.14	.063	2.48	.18	.014
<b>Belief in Big Gods</b>	−3.07	−.21	.002	−3.43	−.23	<.001
Motherhood norms	−.12	−.01	.907	−.90	−.06	.370
<b>Sexual strategy</b>	3.83	.26	<.001	2.41	.16	.017
$\Delta R^2$		.14	<.001		.14	<.001

Note. Supportive abortion attitudes ( $n = 212$ ) Step 1:  $F(4, 208) = 3.06, p = .018$ , adjusted  $R^2 = .037$ ; Step 2:  $F(8, 204) = 6.12, p < .001$ , adjusted  $R^2 = .162$ ; opposition to banning abortion ( $n = 212$ ) Step 1:  $F(4, 208) = 6.02, p < .001$ , adjusted  $R^2 = .087$ ; Step 2:  $F(8, 204) = 8.03, p < .001$ , adjusted  $R^2 = .210$ ; significant predictors are italicized ( $\alpha p = .05$ ) and in bold ( $\alpha$  corrected for multiple comparisons  $p = .0125$ ).

.0125). After accounting for demographic factors in the first step (i.e., age, gender, religiosity, and political orientation), our model significantly predicted abortion attitudes in Mexico (abortion attitudes:  $F[8, 204] = 6.12, p < .001$ , adjusted  $R^2 = .16$ ; opposition to banning abortion:  $F[8, 204] = 8.03, p < .001$ , adjusted  $R^2 = .21$ ), the United States (abortion attitudes:  $F[8, 203] = 11.79, p < .001$ , adjusted  $R^2 = .29$ ; opposition to banning abortion:  $F[8, 203] = 16.51, p < .001$ , adjusted  $R^2 = .37$ ), the United Kingdom (abortion attitudes:  $F[8, 192] = 4.60, p < .001$ , adjusted  $R^2 = .13$ ; opposition to banning abortion:  $F[8, 192] = 10.06, p < .001$ , adjusted  $R^2 = .27$ ), and India (abortion attitudes:  $F[8, 199] = 4.58, p < .001$ , adjusted  $R^2 = .12$ ; opposition to banning abortion:  $F[8, 198] = 6.92, p < .001$ , adjusted  $R^2 = .19$ ). The most consistent relationship between a predictor and both outcomes emerged for sexual strategy. Sexual strategy predicted abortion attitudes in Mexico, the United States, and India, such that long-term sexual strategies were associated with more restrictive abortion attitudes (see Tables 5–8; see Figure 1). Sexual strategy predicted support for banning abortion in the United States and the United Kingdom, such that long-term sexual strategies were associated with stronger support for banning abortion.

Individuals with more traditional/sexist gender role attitudes reported more restrictive abortion attitudes in the United States, but this relationship was not significant in

**Table 6.** Associations of demographic factors (age, gender, political orientation, and religiosity), gender role beliefs, motherhood norms, Big God beliefs, and sexual strategy with supportive abortion attitudes and opposition to banning abortion in the United States

Model	Supportive abortion attitudes			Opposed to banning abortion		
	<i>t</i>	$\beta$	<i>p</i>	<i>t</i>	$\beta$	<i>p</i>
<b>Step 1</b>						
<b>Age</b>	1.72	.11	.087	2.53	.16	.012
Gender	−.53	−.03	.597	.02	.001	.985
<b>Religiosity</b>	−3.23	−.20	.001	−2.74	−.17	.007
<b>Political orientation</b>	5.73	.36	<.001	6.59	.41	<.001
<i>R</i> <sup>2</sup>		.18	<.001		.21	<.001
<b>Step 2</b>						
<b>Gender role attitudes</b>	3.11	.22	.002	4.42	.29	<.001
<b>Belief in Big Gods</b>	−2.26	−.16	.025	−2.78	−.19	.006
Motherhood norms	−1.91	−.12	.057	−1.42	−.08	.157
<b>Sexual strategy</b>	2.82	.19	.005	3.64	.23	<.001
$\Delta R^2$		.12	<.001		.17	<.001

Note. Supportive abortion attitudes ( $n = 211$ ) Step 1:  $F(4, 207) = 12.67, p < .001$ , adjusted  $R^2 = .181$ ; Step 2:  $F(8, 203) = 11.79, p < .001$ , adjusted  $R^2 = .290$ ; opposition to banning abortion ( $n = 211$ ) Step 1:  $F(4, 207) = 14.92, p < .001$ , adjusted  $R^2 = .209$ ; Step 2:  $F(8, 203) = 16.51, p < .001$ , adjusted  $R^2 = .370$ ; significant predictors are italicized ( $\alpha p = .05$ ) and in bold ( $\alpha$  corrected for multiple comparisons  $p = .0125$ ).

samples from other contexts (see Tables 5–8). People with more traditional/sexist gender role attitudes reported stronger support for banning abortion in India and the United States (marginally significant after corrections for multiple comparisons [ $p < .05$ ] in Mexico and the United Kingdom; see Figure 2). While belief in Big Gods predicted restrictive abortion attitudes in Mexico, no such relationship emerged for participants in India or the United Kingdom (marginally significant in the United States [ $p < .05$ ]; see Figure 3). Stronger endorsement of Big God beliefs was associated with stronger support for banning abortion in all sampled contexts. Finally, motherhood norms did not emerge as a significant independent predictor of abortion attitudes or opposition to banning abortion in any of our sampled contexts.

## Discussion

Cross-national investigations of abortion attitudes are limited, and most assess these attitudes in ways that fail to capture important variability in judgments about abortion. Indeed, research has shown that the context and reason provided for seeking abortion care (e.g., financial instability, attending university, health risks) strongly shapes judgments about whether or not abortion should



**Table 7.** Associations of demographic factors (age, gender, political orientation, and religiosity), gender role beliefs, motherhood norms, Big God beliefs, and sexual strategy with supportive abortion attitudes and opposition to banning abortion in the United Kingdom

Model	Supportive abortion attitudes			Opposed to banning abortion		
	<i>t</i>	$\beta$	<i>p</i>	<i>t</i>	$\beta$	<i>p</i>
<b>Step 1</b>						
<b>Age</b>	.46	.03	.644	<b>2.67</b>	<b>.18</b>	<b>.008</b>
Gender	-.11	-.01	.910	-.81	-.05	.419
<b>Religiosity</b>	<b>-4.33</b>	<b>-.29</b>	<b>&lt;.001</b>	<b>-3.40</b>	<b>-.23</b>	<b>&lt;.001</b>
<b>Political orientation</b>	<b>2.32</b>	<b>.16</b>	<b>.022</b>	<b>3.91</b>	<b>.27</b>	<b>&lt;.001</b>
<i>R</i> <sup>2</sup>		.10	<.001		.13	<.001
<b>Step 2</b>						
<i>Gender role attitudes</i>	.72	.06	.475	2.30	.17	.024
<b>Belief in big gods</b>	<b>-1.53</b>	<b>-.14</b>	<b>.128</b>	<b>-3.33</b>	<b>-.27</b>	<b>.001</b>
Motherhood norms	-.85	-.06	.398	-1.41	-.09	.160
<b>Sexual strategy</b>	<b>1.93</b>	<b>.15</b>	<b>.055</b>	<b>2.80</b>	<b>.20</b>	<b>.006</b>
$\Delta R^2$		.05	.034		.15	<.001

Note. Supportive abortion attitudes ( $n = 200$ ) Step 1:  $F(4, 196) = 6.30, p < .001$ , adjusted  $R^2 = .096$ ; Step 2:  $F(8, 192) = 4.60, p < .001$ , adjusted  $R^2 = .126$ ; opposition to banning abortion ( $n = 200$ ) Step 1:  $F(4, 196) = 8.45, p < .001$ , adjusted  $R^2 = .130$ ; Step 2:  $F(8, 192) = 10.06, p < .001$ , adjusted  $R^2 = .266$ ; significant predictors are italicized ( $\alpha p = .05$ ) and in bold ( $\alpha$  corrected for multiple comparisons  $p = .0125$ ).

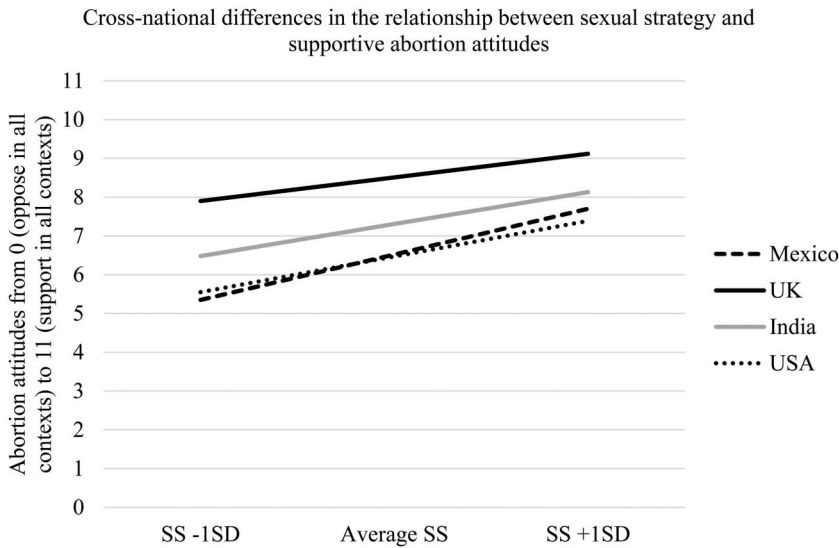
be accessible (Jozkowski et al., 2018). In employing a vignette approach to assess attitudes toward abortion in a variety of contexts, we sought to understand the relationship between country-level factors (e.g., gender inequality), individual-level factors (e.g., gender role attitudes), and support for abortion. Specifically, our application of social control theory and a cultural evolution framework conceptualizes abortion attitudes as a product of social norms (e.g., expectations that people should be treated differently as a function of sex/gender, norms that position motherhood as *essential* to womanhood) and legislative mechanisms that moralize and criminalize abortion. As predicted, people living in countries with more restrictive abortion legislation and with greater gender inequality reported more restrictive abortion attitudes and stronger support for banning abortion. Furthermore, as hypothesized, people who reported more traditional/sexist gender role attitudes, people who believe that god/gods directly intervene in human affairs, and who endorsed long-term, committed sexual strategies reported more restrictive abortion attitudes and stronger support for banning abortion. When probing the relationship between belief in Big Gods and abortion attitudes, we find that belief in supernatural punishment is associated with stronger support for banning abortion (but not abortion attitudes) even when controlling for level of overall religiosity.

**Table 8.** Associations of demographic factors (age, gender, political orientation, and religiosity), gender role beliefs, motherhood norms, Big God beliefs, and sexual strategy with supportive abortion attitudes and opposition to banning abortion in India

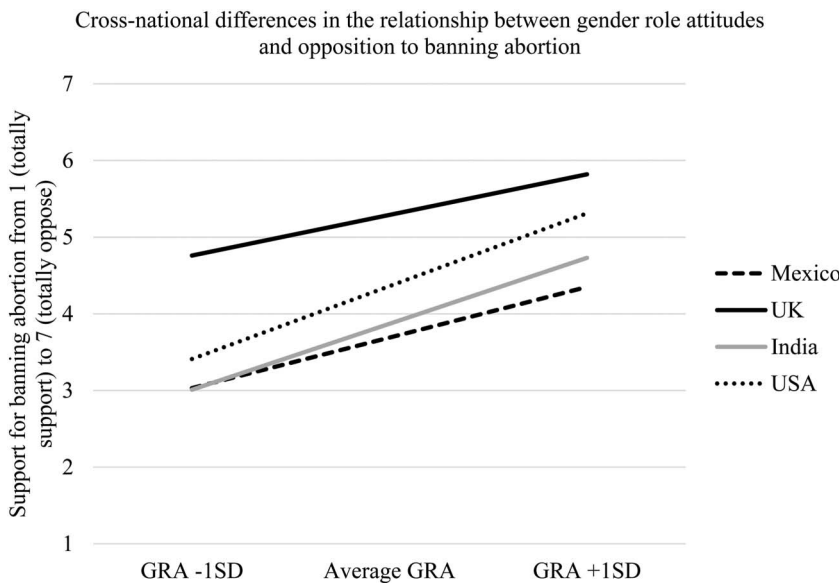
Model	Supportive abortion attitudes			Opposed to banning abortion		
	<i>t</i>	$\beta$	<i>p</i>	<i>t</i>	$\beta$	<i>p</i>
<b>Step 1</b>						
Age	1.18	.08	.240	.93	.07	.354
Gender	-.24	-.02	.810	-.86	-.06	.390
<b>Religiosity</b>	<b>-3.11</b>	<b>-.21</b>	<b>.002</b>	-.90	-.06	.368
<i>Political orientation</i>	2.47	.17	.014	-.89	-.06	.375
<i>R</i> <sup>2</sup>		.06	.001		<.001	.598
<b>Step 2</b>						
<b>Gender role attitudes</b>	<b>2.08</b>	<b>.16</b>	<b>.039</b>	<b>5.14</b>	<b>.39</b>	<b>&lt;.001</b>
<b>Belief in Big Gods</b>	.78	.06	.439	<b>-4.08</b>	<b>-.28</b>	<b>&lt;.001</b>
Motherhood norms	.42	.03	.675	1.34	.09	.181
<b>Sexual strategy</b>	<b>4.06</b>	<b>.30</b>	<b>&lt;.001</b>	1.52	.11	.131
$\Delta R^2$		.07	.002		.21	<.001

Note. Supportive abortion attitudes ( $n = 207$ ) Step 1:  $F(4, 203) = 4.60, p = .001$ , adjusted  $R^2 = .064$ ; Step 2:  $F(8, 199) = 4.58, p < .001$ , adjusted  $R^2 = .121$ ; opposition to banning abortion ( $n = 206$ ) Step 1:  $F(4, 202) = .69, p = .598$ , adjusted  $R^2 < .001$ ; Step 2:  $F(8, 198) = 6.92, p < .001$ , adjusted  $R^2 = .187$ ; significant predictors are italicized ( $\alpha p = .05$ ) and in bold ( $\alpha$  corrected for multiple comparisons  $p = .0125$ ).

Investigations of country-level or *macro-level* determinants of abortion attitudes across cultures are limited; as Fernández et al. (2023) explain, previous research has identified “a very restricted range of macro-level determinants of abortion attitudes” and as such “our understanding of the contextual forces shaping beliefs on this matter may also, unwittingly, be restricted” (p. 2). Research that does explore why and how support for abortion varies across cultural contexts shows that less religious (Adamczyk, 2022), more affluent (Gaskins et al., 2013), more politically free (Zhang, 2020), less restrictive abortion policy (i.e., permitting legal access to abortion; Loll & Hall, 2019), and more gender equal (indexed by labor force participation; Fernandez et al., 2023) contexts are particularly likely to be characterized by high levels of public support for abortion. Our work contributes to this small, but growing body of literature, highlighting the role that abortion legislation and gender equality play in shaping abortion attitudes. Greater levels of gender equality (as indexed by (in)equalities in health outcomes, educational attainment, labor market participation, and participation in government) and more permissive abortion legislation are associated with support for abortion in a variety of contexts and for a variety of reasons. Both gender equality and access to legal abortion likely shape abortion attitudes through discursive processes; when women, trans, and gender-diverse people participate more



**Figure 1.** Cross-national differences in the relationship between sexual strategy and supportive abortion attitudes. *Note.* Hierarchical regression models (see Tables 5–8) demonstrate that sexual strategy significantly predicts abortion attitudes in all sampled contexts except the United Kingdom. Specifically, we find that long-term sexual strategies (indexed by lower values on the scale) were significantly associated with more restrictive abortion attitudes in Mexico ( $B = 1.49, p < .001; 95\% \text{ CI } [.73, 2.26]$ ), India ( $B = 1.35, p < .001; 95\% \text{ CI } [.69, 2.00]$ ), and the United States ( $B = 1.10, p = .005; 95\% \text{ CI } [.33, 1.87]$ ), but not the United Kingdom ( $B = .62, p = .055; 95\% \text{ CI } [-.01, 1.25]$ );  $\alpha$  level corrected for multiple comparisons,  $p = .0125$ .

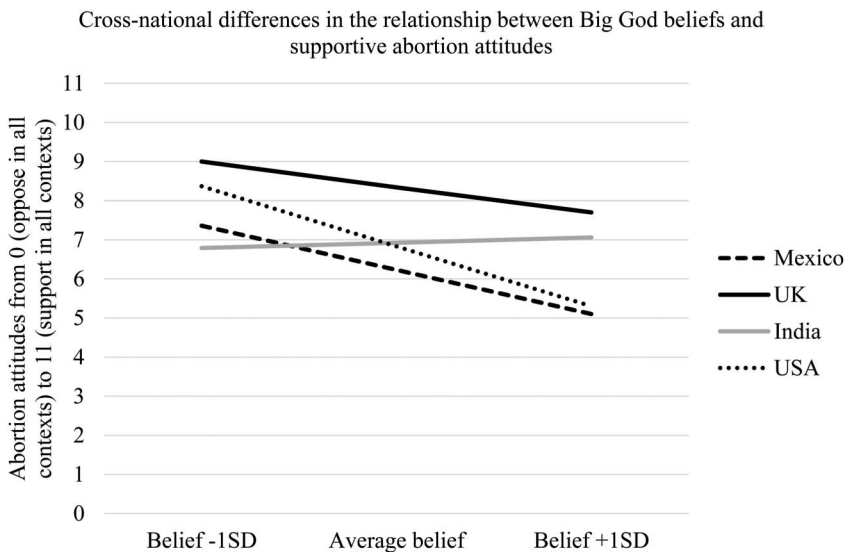


**Figure 2.** Cross-national differences in the relationship between gender role attitudes and opposition to banning abortion. *Note.* Hierarchical regression models (see Tables 5–8) demonstrate that gender role attitudes significantly predict opposition to banning abortion in the United States and India. Specifically, we find that more traditional/sexist gender role attitudes (indexed by lower values on the scale) were significantly associated with stronger support for banning abortion in the United States ( $B = 1.06, p < .001; 95\% \text{ CI } [.57, 1.61]$ ), and India ( $B = 1.24, p < .001; 95\% \text{ CI } [.76, 1.71]$ ), but not in the United Kingdom ( $B = .49, p = .024; 95\% \text{ CI } [.06, .91]$ ) or Mexico ( $B = .65, p = .014; 95\% \text{ CI } [.13, 1.17]$ );  $\alpha$  level corrected for multiple comparisons,  $p = .0125$ .

widely in education and the workforce, the costs of (un)planned pregnancy, benefits of reproductive agency, and opportunities to discuss/learn about family planning strategies all increase. Indeed, when legislation broadens the conditions wherein a pregnant person can access legal abortion care, the need for secrecy around the topic of abortion decreases (Mishtal et al., 2023). If we assume that secrecy and shame about abortion care have a bidirectional relationship with abortion stigma (see Adair & Lozano, 2022; Sorhaindo & Lavelanet, 2022), then we can view discourse about abortion as a destigmatizing process. Taken together, these findings underscore the importance of economic, political, and social inequalities in shaping health inequalities; achievement of UN

Sustainable Development Goal 5 (“achieve gender equality and empower all women and girls”) will depend on the extent to which these complex and interconnected structural inequalities can be addressed.

Our findings are consistent with the broader literature on personal or individual-level predictors of abortion attitudes. Several survey studies show that more traditional/sexist gender role attitudes (Jelen, 2014; Osborne et al., 2022), higher levels of religiosity (e.g., service attendance, use of prayer; see Adamczyk et al., 2020 for a review), and disapproving attitudes toward casual sex (Kurzman et al., 2010) are all associated with opposition to abortion. We add to this line of inquiry by highlighting a domain of religiosity (belief in supernatural punishment) that may play a critical role in



**Figure 3.** Cross-national differences in the relationship between Big God beliefs and supportive abortion attitudes. Note. Hierarchical regression models (see Tables 5–8) demonstrate that belief in Big Gods significantly predicts attitudes toward abortion in Mexico, but not in the United Kingdom, the United States, or India. Specifically, we find that stronger endorsement of Big God beliefs (indexed by higher values on the scale) were significantly associated with more restrictive abortion attitudes in Mexico ( $B = -.81$ ,  $p = .002$ ; 95% CI  $[-1.32, -.29]$ ) but not in any other sampled context [the United States ( $B = -.73$ ,  $p = .025$ ; 95% CI  $[-1.37, -.09]$ ); the United Kingdom ( $B = -.37$ ,  $p = .128$ ; 95% CI  $[-.85, .11]$ ); India ( $B = .25$ ,  $p = .439$ ; 95% CI  $[-.38, .88]$ ];  $\alpha$  level corrected for multiple comparisons,  $p = .0125$ .

shaping disapproval of and opposition to abortion. We find that belief in supernatural punishment is associated with stronger support for banning abortion (but not broader abortion attitudes) even when controlling for level of religiosity. Given the relationship between belief in supernatural punishment and other social attitudes (e.g., prosociality and pronatalism; Norenzayan et al., 2016), it stands to reason that this represents one facet of religiosity that shapes opposition to abortion; other facets include attitudes about the sanctity of human life and attitudes about sexual morality (Jelen, 2014; Lockhart et al., 2023). Indeed, a cultural evolution framework underscores the importance of punishments and rewards as mechanisms for transmitting normative information (Gelfand et al., 2024). Supernatural and criminal punishments of certain reproductive experiences (i.e., abortion) rather than others (i.e., retaining a pregnancy) may be one way that humans acquire and transmit norms that constrain reproductive freedom. Future research and outreach efforts should continue to probe the relationship between religious values and abortion attitudes, to highlight more nuanced ways of understanding the relationship between religious belief and attitudes toward reproductive freedom.

### Exploratory Analyses: Mexico, the United Kingdom, India, and the United States

A secondary, but important, component to our study was the use of exploratory analyses that reveal how the relationship between these individual-level predictors and abortion attitudes is highly contingent on cultural context. In Mexico, those who more strongly endorsed the belief that god punishes the wicked and rewards the virtuous and

those who prefer sex to occur in the context of a long-term, committed relationship reported more restrictive abortion attitudes and stronger support for banning abortion. Mexico, with 82.7% of the population identifying as Catholic, is a highly religious cultural context. Only 4.7% of the population reports no religious affiliation or preference (De la Torre et al., 2017); as such, much of the discourse regarding abortion is contextualized by religious norms. Sorhaindo et al. (2014), through interviews and focus groups in Mexico, highlighted how fear of divine punishment shapes secrecy and stigma among those who receive abortion care. Our results are consistent with this work and show that supernatural punishment plays key role in shaping opposition to abortion in Mexico.

In the United Kingdom, belief in supernatural punishment and endorsement of a long-term sexual strategy similarly predicted stronger support for banning abortion but failed to predict abortion attitudes more broadly. The United Kingdom is becoming an increasingly secular state, such that the proportion of people indicating no religious affiliation has become the second most common response in the national census (25.2% in 2011 up to 37.2% in 2021; Office for National Statistics, 2022). This secularization may play a role in shaping the increasing acceptance of abortion in this cultural context, where support for traumatic abortion has remained high since the 1960s and support for elective abortion has been on the rise from the 1960s to the 2010s (Clements & Field, 2018). Although public sentiment toward abortion in the United Kingdom is relatively supportive, in line with legislation that supports access to abortion in a variety of circumstances (*Abortion Act, 1967*), women who have received abortion care in this context still report experiencing internalized stigma (e.g., feeling that they *should suffer* in their termination

experiences; Love, 2021). Our findings demonstrate that this persistent stigma may be shaped by beliefs about supernatural punishment, which is consistent with The Church of England's public stance on abortion (Church of England, 2019) and research findings that show that UK believers, particularly those who rate religion as more important and who more frequently attend church services, are more likely to oppose abortion (Clements, 2014).

In India, those who reported greater comfort with sex in the context of a long-term, committed relationship reported more restrictive abortion attitudes, those with more traditional/sexist gender role attitudes, and who more strongly endorsed belief in supernatural punishment reported stronger support for banning abortion. While legislation protects people's right to access abortion under a wide variety of circumstances in India (Pai & Chandra, 2023), there are many significant barriers to abortion care in this cultural context (Singh et al., 2018) including a lack of knowledge of Indian abortion laws and persistent abortion stigma among healthcare providers (Nandagiri, 2019). As such, the achievement of UN Sustainable Development Goal 3 ("ensure healthy lives and promote well-being for all at all ages") will depend not only on the state of institutions that control access to abortion care (e.g., legislation and policy) but also the attitudes and behaviors of people within those institutions. Our findings are consistent with relevant work in this context, which shows that women interviewed about abortion describe it as *a sin* (Dasgupta et al., 2019). Indeed, some religious scholars argue that Hindu sacred texts conceptualize life as beginning at conception and therefore position abortion as a violation of the ethical principle of noninjury or *ahimsa* (Stephens et al., 2010).

In the United States, participants who reported restrictive abortion attitudes and stronger support for banning abortion also reported more traditional/sexist gender role attitudes, belief in supernatural punishment, and long-term sexual strategies. Christianity (70.6%), including Protestant and Catholic believers, is the dominant belief system in this cultural context. As such, religious norms play an important role in shaping abortion attitudes; survey data show that both secular and religious people are affected by these norms, such that believers and nonbelievers living in counties characterized by higher rates of church attendance were more disapproving of abortion (Adamczyk & Valdimarsdóttir, 2018). Interview data demonstrate that religious beliefs are a common feature of internalized (e.g., "... how is God going to punish me, later on?;" p. 388) and enacted stigma (e.g., "... my father and my stepmother. . . stopped speaking to me. . . I was. . . going to hell;" p. 390) among women in the United States who are seeking abortion care (Frohworth et al., 2018). Survey data show that Americans who report stronger sexual disgust (e.g., feeling disgusted "watching a pornographic

video") and who have more traditional/sexist gender role attitudes are more likely to oppose abortion (Patev et al., 2019). In this cultural context, abortion may be perceived to violate gendered (e.g., the belief that women are inherently maternal) and sexual purity (e.g., women should be sexually chaste) norms. Our findings are consistent with this literature, showing that belief in supernatural punishment, gender role attitudes, and personal sexual preferences and behaviors, all play a critical role in shaping opposition to abortion in the United States.

## Limitations

Though we attempted to study a variety of cultures, there are still many cultures missing from this sample; for example, we have not examined abortion ideals in nonindustrialized or low market-integrated societies, where attitudes toward reproductive justice issues may be shaped by unique and differing factors. A related limitation is our use of the Qualtrics Panels service to facilitate data collection, which resulted in samples that over-represented those with university education (e.g., 84.2% of participants from India, compared to national estimates of a gross enrollment ratio of approximately 27.3%; Ministry of Education, 2023) and those who identify as nonreligious (e.g., 34.4% of participants from Mexico, compared to national estimates of 8.1% reporting not practicing any religion; US Department of State, 2021). This may result in a sample of participants with more supportive attitudes toward abortion overall (Osborne et al., 2022). Taken together, we recognize that there are shortcomings associated with the use of online panel services to facilitate data collection (see Eyal et al., 2021). Furthermore, we use assessment tools that have largely been developed in Euro-American contexts to explore the relationships detailed in this manuscript. While we have found that internal consistency reliability estimates are quite consistent across our samples, and exploratory CFAs (e.g., for scales assessing belief in Big Gods and motherhood norms) evidence significant loadings onto respective latent variables, we cannot completely rule out measurement variance across cultural contexts as contributing to our observed pattern of results.

## Conclusion

Our findings underscore the importance of UN Sustainable Development Goals, specifically Goal 3 which aims to "ensure healthy lives and promote well-being for all at all ages" and Goal 5 which emphasizes "achiev[ing] gender equality and empower[ing] all women and girls." Our research shows that political, economic, and health

inequalities are related to abortion attitudes, such that individuals living in places where access to legal abortion is restricted and women have less social, economic, and political power, are more likely to oppose abortion. Access to safe and legal abortion, among other reproductive freedoms such as access to contraception, is critically related to overall gender equality. Specifically, the extent to which women can access economic and political power will shape, at least in part, the extent to which reproductive healthcare services are gender equal (see Miani, 2021). Future research and outreach efforts should explore the extent to which sociocultural factors shape abortion attitudes through discursive processes; greater opportunities for women and gender diverse people to openly discuss reproductive healthcare may reduce stigma and promote greater support for reproductive freedom and autonomy. Taken together, our findings underscore the importance of addressing both the psychological/individual-level and institutional/country-level factors that create and maintain gender inequalities, if we intend to expand access to safe abortion care and end discrimination against women and girls.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Publication Ethics

Informed consent was obtained from all participants included in the study. Our research procedures were consistent with the American Psychological Association's, and the British Psychological Society's, published principles of research ethics and the IRB/ethics review boards at our respective institutions.




### Authorship

Dr. Lora Adair, conceptualization, methodology, formal analysis, data curation, investigation, writing – original draft, writing – review and editing, project administration, resources, funding acquisition, co-supervision; Dr. Nicole Lozano, conceptualization, methodology, resources, investigation, writing – original draft, writing – review and editing, co-supervision; Dr. Nelli Ferenczi, methodology, formal analysis, data curation, resources, writing – original draft, visualisation.

### Open Data

The information needed to reproduce all of the reported results is available via Figshare—data (<https://doi.org/10.17633/rd.brunel.24119271>) and syntax (<https://doi.org/10.17633/rd.brunel.24119307>) are both publicly available.

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