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ORIGINAL ARTICLE

# Examining Changes in Abortion Attitudes Following the Transition to Parenthood

**Eden V. Clarke**[1] · **Chris G. Sibley**[1] · **Danny Osborne**[1]

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## Abstract

The recent reversal of *Roe v. Wade* in the United States demonstrates both the precarity of reproductive rights and the need to identify the correlates of abortion support. Surprisingly, little is known about how the transition to parenthood impacts attitudes toward abortion. We address this oversight by utilising nine annual waves (2011–2019) of longitudinal panel data to examine rates of change in support for elective and traumatic abortion in the year(s) before and after participants became parents ($N = 1{,}266$). Consistent with population trends, support for elective and traumatic abortion increased in the year(s) before participants became parents. After the transition to parenthood, support for elective abortion continued to increase (albeit at a slower rate), whereas traumatic abortion support stopped increasing. These results demonstrate that the process of becoming a parent attenuates the growth of abortion support over time and highlight the need for robust policies that protect reproductive autonomy.

**Keywords** Abortion · Parenthood · Gender inequality · Reproductive rights

> *The individual right to get an abortion, to terminate an unwanted or unsafe pregnancy safely and legally and freely, is a right that should be protected by the state, as all human rights should be.*
> Jane Carnal (2021, p.2)

Although many argue that the ability to choose to have an abortion is a human right, pro-choice advocates have struggled to achieve progressive abortion legislation since the twentieth century (Reagan, 1997). Indeed, despite making headway on various feminist issues, abortion remains a hotly contested topic that threatens to undermine gender equality (Osborne et al., 2022). With the recent reversal of *Roe v. Wade* by the United States (US) Supreme Court, the fight for reproductive autonomy is likely to increase with a renewed sense of urgency in the coming decade. In short, the abortion debate is set to persist well into the 21st century.

Pro-choice and anti-abortion advocates often employ numerous rhetorical tactics to control the narrative of the abortion debate. One such tactic utilised by the political right aims to frame abortion as a perceived violation of the sacred role of parenthood. Indeed, given that abortion inherently stops the transition to parenthood, the strife for reproductive autonomy is often met with pleas to be 'pro-family'. Such appeals to parenthood may explain why relatively egalitarian nations, including New Zealand (i.e., the country where the current study takes place), have delayed the legalisation of abortion until recently (Macfarlane et al., 2021; McCulloch, 2013; Osborne et al., 2022). Given the myriad anti-abortion campaigns purporting to be 'pro-family' and the ostensible link between parenthood and abortion, it is necessary to understand how the actual transition to parenthood impacts people's abortion attitudes. Yet surprisingly, relatively few studies—all of which exclusively utilise cross-sectional data—have examined the impact of parenthood on support for reproductive autonomy.

To address this oversight, the present study utilises a novel statistical analysis to examine the impact the transition to parenthood has on peoples' abortion attitudes within a longitudinal panel study of New Zealand adults. We begin

✉ Eden V. Clarke
eden.clarke@auckland.ac.nz

Chris G. Sibley
c.sibley@auckland.ac.nz

Danny Osborne
d.osborne@auckland.ac.nz

[1] School of Psychology, The University of Auckland, Auckland, New Zealand

by reviewing the literature on abortion attitudes. We then introduce research demonstrating that parenthood is associated with opposition to various forms of progressive social change outside the domain of reproductive autonomy. Next, we review the limited, cross-sectional research that directly compares parents' and non-parents' abortion attitudes. Our introduction concludes with an overview of the current study and a summary of our hypotheses.

## Abortion Attitudes

### Reproductive Rights and Societal Outcomes

Before unpacking the correlates of abortion attitudes, it is critical to consider the societal benefits associated with progressive reproductive rights. Specifically, Goldin and Katz (2002) theorise that reproductive autonomy provides individuals with alternatives to traditional societal roles by enabling them to either delay or avoid parenthood. Consistent with this perspective, women with legal access to abortion and family planning (compared to women who face restricted reproductive health care) are more likely to invest in their education and career and, consequently, achieve higher income and life satisfaction (Goldin & Katz, 2002; Pezzini, 2005). More broadly, progressive abortion policies are associated with safer egalitarian societies. For instance, utilising cross-sectional data from the US, Donohue and Levitt (2001, 2004) demonstrate that the legalisation of abortion in the 1970s preceded reductions in crime 20 years later. Henry and colleagues (2022) similarly highlight the co-variance between the legalisation of abortion and progressive lesbian, gay and bisexual (LGB) laws. In their examination of 194 countries, the authors found that countries with more progressive abortion laws also endorsed more progressive LGB laws. Together, these results illustrate the societal benefits heralded by legalised abortion. Yet, defending progressive abortion legislation is difficult, given the complexity of attitudes towards reproductive autonomy.

### The Complexity of Abortion Attitudes

Although many view abortion as a singular concept, attitudes towards reproductive rights depend on the underlying circumstances surrounding an abortion (Jozkowski et al., 2018). Specifically, scholars often distinguish between elective and traumatic abortion. Whereas elective abortion refers to the decision to have an abortion for any reason (e.g., financial difficulties or the individual does not want to carry the pregnancy to term), traumatic abortion refers to the decision to terminate a pregnancy when carrying the foetus to term would endanger the pregnant person's life, the pregnancy is a result of rape or incest, and/or there is a strong likelihood of a severe/life-threatening foetal abnormality. Although there is variation in abortion terminology (e.g., social and physical abortion; see Bahr and Marcos, 2003), we employ the terms "elective" and "traumatic" abortion because they are (arguably) intuitive descriptions of the motivations for abortion and because these labels enable consistency with our existing research programme on reproductive rights (see Huang et al., 2014, 2016; Osborne et al., 2022; Osborne & Davis, 2009, 2012).

Differentiating between elective and traumatic abortion is not merely a theoretical endeavour. First, research consistently demonstrates that people support traumatic abortion more than elective abortion (Hoffmann & Johnson, 2005; Huang et al., 2014; Jozkowski et al., 2018; Mikołajczak & Bilewicz, 2015; Osborne et al., 2022). Second, people can simultaneously value reproductive rights and the rights of a foetus (Alvarez & Brehm, 1995; Martinez et al., 2005). Consequently, pro-choice advocates often report ambivalence towards elective abortion, whereas anti-abortion advocates generally report ambivalence towards traumatic abortion (Craig et al., 2002). Third, attitudes toward elective and traumatic abortion form two distinct, albeit correlated, latent factors. Indeed, Osborne et al. (2022) conducted a set of confirmatory factor analyses on US participants' attitudes towards seven separate abortion scenarios and found that a two-factor solution distinguishing between elective and traumatic abortion fit these data better than a one-factor solution did (see also Bahr and Marcos, 2003). Further analyses of nationally representative cross-sectional data from the US identified four unique response patterns underlying abortion attitudes. Although the majority of participants consistently either supported (43.8% of the sample) or opposed (14.8% of the sample) elective and traumatic abortion, a sizeable minority of the population supported traumatic abortion and either expressed weak support (12.2% of the sample) or opposed (29.2% of the sample) elective abortion. Thus, although attitudes towards elective and traumatic abortion are correlated, such attitudes are distinct and should be examined independently in order to accurately capture the complexity of the abortion debate.

### A Trend Toward Gender Equality Over Time

In addition to differentiating between elective and traumatic abortion, research has examined changes in abortion attitudes over time. Broadly, Western societies are becoming more egalitarian over time, as evidenced by the gradual decline in sexism (Gomes et al., 2022; Huang et al., 2019) and the slow increase in women's educational attainment, income, and employment opportunities (England et al., 2020). Consistent with the trend toward gender

equality, Jelen (2017) demonstrates that both Democrats and Republicans in the US are becoming more supportive of abortion over time. Likewise, Osborne et al. (2022) utilised four decades of cross-sectional data from the General Social Survey to assess population-level changes in support for elective and traumatic abortion across time in the US. The authors found that support for elective abortion slowly increased, whereas support for traumatic abortion remained high and stable over time. Further analyses of nationally representative longitudinal panel data from New Zealand revealed within-person changes in support for elective and traumatic abortion. Specifically, although participants consistently demonstrated more support for traumatic abortion than for elective abortion, support for both abortion scenarios increased steadily, albeit slowly, over a nine-year period. Collectively, these results demonstrate that the general population is becoming more supportive of elective and traumatic abortion over time.

Despite the gradual increase in support for elective and traumatic abortion over time, anti-abortion movements and restrictive abortion legislation persist. As such, the predictors of abortion attitudes continue to receive considerable attention in the literature. Unsurprisingly, research reveals that conservatism (Prusaczyk & Hodson, 2018; Yen & Zampelli, 2017) and conservative party identification (Osborne et al., 2022; Yen & Zampelli, 2017) correlate negatively with support for elective and traumatic abortion. Similarly, religiosity consistently emerges as a reliable predictor of abortion attitudes. Specifically, religious identification (Mosley et al., 2020; Ogland & Verona, 2011; Yen & Zampelli, 2017), church attendance (Mikołajczak & Bilewicz, 2015), living in a religious area (Adamczyk & Valdimarsdóttir, 2018), and having an intimate partner who identifies as religious (Osborne et al., 2022) correlate negatively with support for elective and traumatic abortion. Finally, traditional gender role attitudes, including benevolent sexism, correlate negatively with support for both abortion scenarios (Huang et al., 2014, 2016; Osborne & Davies, 2009, 2012).

## The Transition to Parenthood

Although a vast amount of research has investigated the ideological correlates of abortion attitudes, comparatively less research has examined how becoming a parent impacts support for elective and traumatic abortion. A related literature does, however, demonstrate that the transition to parenthood precedes increases in related attitudes, including conservatism. Unsurprisingly, having a child evokes new concerns regarding threats to child safety and morality (Eagly et al., 2004; Kerry & Murray, 2018). As such, parents (compared to non-parents) are more risk-aversive (Eibach & Mock, 2011) and vigilant towards signs of danger (Fessler et al., 2014). Because conservativism is anticipated to alleviate perceived threats to safety and morality (e.g., see Jost, 2020), women typically report higher levels of political conservatism, support for the military, and opposition to drug legalisation after becoming mothers (Greenlee, 2010).

Related work demonstrates that the increased demands associated with the birth of a child prompt individuals to reconsider their identity and gender roles (Katz-Wise et al., 2010; Kaźmierczak & Karasiewicz, 2019). For instance, Katz-Wise and colleagues (2010) found that men and women became more supportive of traditional gender roles after becoming parents. In order to fulfil these traditional gender roles, women (compared to men) attribute more importance to their role as a parent, whereas men (compared to women) attribute more importance to their role as a 'breadwinner' following the transition to parenthood (Kaźmierczak & Karasiewicz, 2019). Collectively, these separate literatures demonstrate that men and women often become more (socially) conservative after becoming parents.

Despite research indicating that the process of becoming a parent coincides with an increase in conservative attitudes, direct evidence that the transition to parenthood impacts people's abortion attitudes is lacking. Indirect evidence using cross-sectional methods does, however, reveal that parents are less supportive than non-parents of elective and traumatic abortion. For example, utilising cross-sectional data from the US and treating abortion as a single issue, Elder and Greene (2016) found that parents were more anti-abortion than non-parents. Likewise, Osborne et al. (2022) utilised cross-sectional data to examine parental differences in attitudes towards elective and traumatic abortion in New Zealand. The authors found that parents opposed elective and traumatic abortion more than non-parents, especially among younger cohorts. Finally, numerous studies demonstrate that the number of children participants have correlates negatively with support for elective and traumatic abortion (see Adamczyk, 2013; Adamczyk and Valdimarsdóttir, 2018; Huang et al., 2014; Walzer, 1994). These studies suggest that, despite a slow, albeit steady, increase in support for gender equality (e.g., see England et al., 2020; Gomes et al., 2022; Huang et al., 2019), parents are consistently less supportive than non-parents of abortion rights.

## The Current Study

Although the extant literature provides important insights into how parents' abortion attitudes differ from non-parents, various questions remain. Specifically, because research has exclusively utilised cross-sectional data, it is unclear how the *transition* to parenthood impacts *the same peoples'* abortion attitudes. It is, however, likely that the *transition* to parenthood is accompanied by various attitude changes, such

as an increase in conservative attitudes, that will impact *the same people's* support for elective and traumatic abortion. To these ends, the current research extends upon past studies by using longitudinal panel data to perform an event-aligned piecewise latent growth curve model to examine differences in the rate of change in abortion support pre- vs. post-parenthood. Like a traditional growth curve model, an event-aligned piecewise latent growth curve model estimates the rate of change for each participant over time (see Stronge et al., 2020). However, unlike a traditional approach, an event-aligned piecewise latent growth curve model estimates separate growth curves before and after an event (see Stronge et al., 2020). In this case, we estimate separate growth curves that model changes in support for elective and traumatic abortion in the year(s) before and the year(s) after participants became parents.

### Hypotheses

Complementing the trend toward gender egalitarianism (see England et al., 2020; Gomes et al., 2022; Huang et al., 2019), research from the US and New Zealand reveals that the general population is gradually becoming more supportive of elective and traumatic abortion across time (see Osborne et al., 2022). As such, we hypothesise that support for elective (Hypothesis 1a) and traumatic (Hypothesis 1b) abortion will slowly increase in the year(s) before participants become parents. Yet, after becoming parents, participants should experience numerous social role changes that impact their abortion support. Indeed, research illustrates that the transition to parenthood precedes increases in conservative attitudes, including those that restrict support for progressive social change and increase the reverence of traditional parental roles (Greenlee, 2010; Katz-Wise et al., 2010; Kazmiercak & Karasiewicz, 2019). Cross-sectional research also indicates that parents are less supportive than non-parents of elective and traumatic abortion (Osborne et al., 2022). As such, the rate of change in abortion support should either become non-significant or start to decline for both elective (Hypothesis 2a) and traumatic (Hypothesis 2b) abortion following the transition to parenthood.

To examine the robustness of our hypotheses, we control for numerous time-invariant covariates that should impact support for elective and traumatic abortion. First, because the salience of abortion attitudes is likely to vary over time (e.g., an election year), the current study controlled for the year participants became parents. Second, given that age is a reliable predictor of abortion attitudes (see Barringer et al., 2020; Trlin, 1975; Osborne et al., 2022), we controlled for the age at which participants became parents. Finally, research has revealed inconsistent effects of gender on abortion attitudes (Barkan, 2014; Esposito & Basow, 1995; Huang et al., 2014; Loll & Hall, 2019; also see Osborne et al., 2022 for a review). As such, we also controlled for participants' gender. In doing so, the present study provides the first direct test of the impact the transition to parenthood has on people's attitudes towards elective and traumatic abortion.

## Method

### Sampling Procedure

Data for the current study came from nine annual waves of the New Zealand Attitudes and Values Study (NZAVS). The overall NZAVS project was approved by the University of Auckland Human Ethics Committee and is renewed every three years. Sampling took place over seven occasions. The initial sampling occasion in 2009 (Time 1) recruited 6,518 participants (response rate = 16.6%) from the New Zealand electoral roll (i.e., a list of registered voters). Because voter registration is mandatory and both citizens and permanent residents can vote in New Zealand, this sampling frame captures a random sample of New Zealand citizens who are 18 years of age or older. By 2011, 3,916 of these participants remained in the sample (retention rate = 60.1%). To adjust for sample attrition, a non-random booster sample was recruited via a nationwide news website in 2011 (Time 3). This second sampling occasion added 2,966 participants to the sample.

To enhance the size and diversity of the sample, five additional booster samples were conducted between 2012 and 2019. The sampling occasions in 2012 (Time 4), 2013 (Time 5), and 2016 (Time 8) oversampled hard-to reach-populations using the electoral roll. These booster samples recruited 5,107 new participants at Time 4 (response rate 9.98%), 7,579 new participants at Time 5 (response rate 10.6%), and 7,667 new participants at Time 8 (response rate = 9.7%). A 2018 (Time 10) booster sample recruited an additional 29,293 participants (response rate = 9.2%) through the electoral roll and an online paid promotion. A final booster sample in 2019 (Time 11) recruited 6,106 new participants through another online paid promotion and by asking current participants to invite their partners to join the study. This final sampling occasion at Time 11 resulted in a total sample size of 42,684 participants (38.4% retention rate from Time 1; 72.5% retention from Time 10). We focus on data from Times 3 to 11, as these nine-time points included the first and last consecutive assessment of abortion attitudes in the NZAVS.

## Participant Details

Of the 69,021 participants who responded to at least one wave of the study, 1,266 participants became a parent at some point between Times 3 and 11 and provided partial or complete responses to our focal variables in at least one wave (a) before and (b) after they became a parent (see Table 1). Of these participants, 33.9% identified as male ($n = 429$), 65.9% as female ($n = 834$), and 0.2% did not report their gender ($n = 3$). Additionally, 78.3% identified as New Zealand European ($n = 991$), 12.0% as Māori ($n = 152$), 3.2% as of Pacific Nations ancestry ($n = 41$), 6.2% as of Asian ancestry ($n = 78$) and 0.3% did not report their ethnicity ($n = 4$). The mean age of the sample was 31.36 ($SD = 11.01$) at Time 3 (i.e., the first wave to include attitudes toward abortion).

## Materials

The current study included measures of parental status, abortion attitudes, gender, age and the first wave at which participants reported becoming a parent. All measures were embedded in an omnibus survey that contained additional measures outside the focus of the present study.

### Parental Status

Parental status was measured with a single item that asked participants to report the number of children they had "given birth to, fathered, or adopted." Only those who initially reported they had no children in one or more wave(s) and then reported having one or more children in one or more subsequent wave(s) of the study were included in our analyses.

### Abortion Attitudes

Two items adapted from the General Social Survey (Smith et al., 2020) were used to measure abortion attitudes. One item measured support for elective abortion: "Legalized abortion for women, regardless of the reason." The second item measured support for traumatic abortion: "Legalized abortion when the woman's life is endangered." Both items were measured on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Although non-binary people and transgender men also access abortions, the items assessing abortion attitudes were developed in 1972 (see Smith et al., 2020)—a time in which the field was primarily focused on women's reproductive rights rather than non-binary and transgender rights. Consequently, our items explicitly reference women's reproductive rights to maintain comparability across nations and to ensure consistency in measurement across our longitudinal data set. We do, however, recognise that abortion rights extend beyond traditional conceptualisations of gender.

### Controls

Three control variables were included in our focal analysis. Gender was assessed using an open-ended format and subsequently coded as a dichotomous variable (0 = woman, 1 = man), whereas age was measured by having participants report their date of birth. We also controlled for the first wave at which participants reported the birth or adoption of a child.

**Table 1** Sample sizes, means and standard deviations of support for elective and traumatic abortion for each year before and after participants became parents for the first time

| | Elective Abortion | | | Traumatic Abortion | | |
|---|---|---|---|---|---|---|
| Year(s) | *N* | *M* | *SD* | *N* | *M* | *SD* |
| Pre-parenthood | | | | | | |
| −6 | 124 | 5.35 | 2.03 | 122 | 6.34 | 1.27 |
| −5 | 192 | 5.23 | 2.00 | 192 | 6.32 | 1.31 |
| −4 | 257 | 5.39 | 1.94 | 256 | 6.30 | 1.34 |
| −3 | 389 | 5.51 | 1.81 | 388 | 6.44 | 1.18 |
| −2 | 525 | 5.60 | 1.79 | 527 | 6.49 | 1.08 |
| −1 | 1,250 | 5.44 | 1.94 | 1,249 | 6.36 | 1.24 |
| Post-parenthood | | | | | | |
| 1 | 1,260 | 5.42 | 1.96 | 1,257 | 6.40 | 1.26 |
| 2 | 519 | 5.57 | 1.87 | 521 | 6.48 | 1.19 |
| 3 | 399 | 5.65 | 1.81 | 403 | 6.52 | 1.17 |
| 4 | 289 | 5.73 | 1.83 | 287 | 6.56 | 1.09 |
| 5 | 216 | 5.76 | 1.80 | 217 | 6.50 | 1.22 |
| 6 | 134 | 5.60 | 1.82 | 135 | 6.43 | 1.23 |

## Results

To examine the impact that the transition to parenthood has on abortion attitudes, we performed two separate event-aligned piecewise latent growth curve models (see Lockhart et al., 2022; Stronge et al., 2020) using Bayesian estimation with non-informative priors in *Mplus v. 8.7* (Muthén & Muthén, 1998–2022). Whereas a traditional piecewise latent growth curve model estimates the growth trajectory before and after an event that participants experience simultaneously, an event-aligned model centres participants' data on a focal event (i.e., the year in which they became a parent) rather than a specific wave of data collection (e.g., 2014). Because participants became parents in different years, we utilised an event-aligned piecewise latent growth curve model to estimate the rate of change in participants' support for elective (Model 1) and traumatic (Model 2) abortion in the year(s) preceding the transition to parenthood and the year(s) following the transition to parenthood. For both models, we estimate 95% credibility intervals (CI).

Before discussing our results, it is important to highlight the key differences between traditional null hypothesis testing in a frequentist approach and Bayesian analyses (see also Kruschke et al., 2012). Whereas a 95% confidence interval in a frequentist framework refers to the likelihood that repeated sampling from the population would produce a parameter estimate that contains the true population parameter, a 95% credibility interval in Bayesian statistics refers to the likelihood that the actual population parameter is contained within the credible range of the sample estimate (see Osborne et al., 2016; Yuan and MacKinnon, 2009). Finally, the meaning of *p*-values differs across frequentist and Bayesian approaches: a *p*-value in the frequentist framework conveys the probability of observing the parameter estimate if the null hypothesis was true, whereas *p*-values in a Bayesian framework are one-sided tests that depict the proportion of the sample that falls above or below zero. Therefore, rather than focusing on a $p < .05$, a credibility interval that *does not* contain zero represents a statistically significant effect.

Our first model examined the rate of change in support for elective abortion in the year(s) (a) before and (b) after participants became parents, Posterior Predictive P-Values (PPP) = 0.006, 95% CI [14.056, 111.270]. As predicted, Fig. 1 illustrates that support for elective abortion increased significantly in the year(s) preceding the transition to parenthood ($b = 0.064$, 95% CI [0.023, 0.106], $p = .001$). Also as expected, the growth trajectory in support for elective abortion was roughly 3/4 the size (although nonetheless significant) in the year(s) following the transition to parenthood ($b = 0.048$, 95% CI [0.005, 0.090], $p = .014$). Notably, these effects emerged after adjusting for (a) participants' gender, (b) the age at which participants became parents, and (c) the year in which participants became parents.

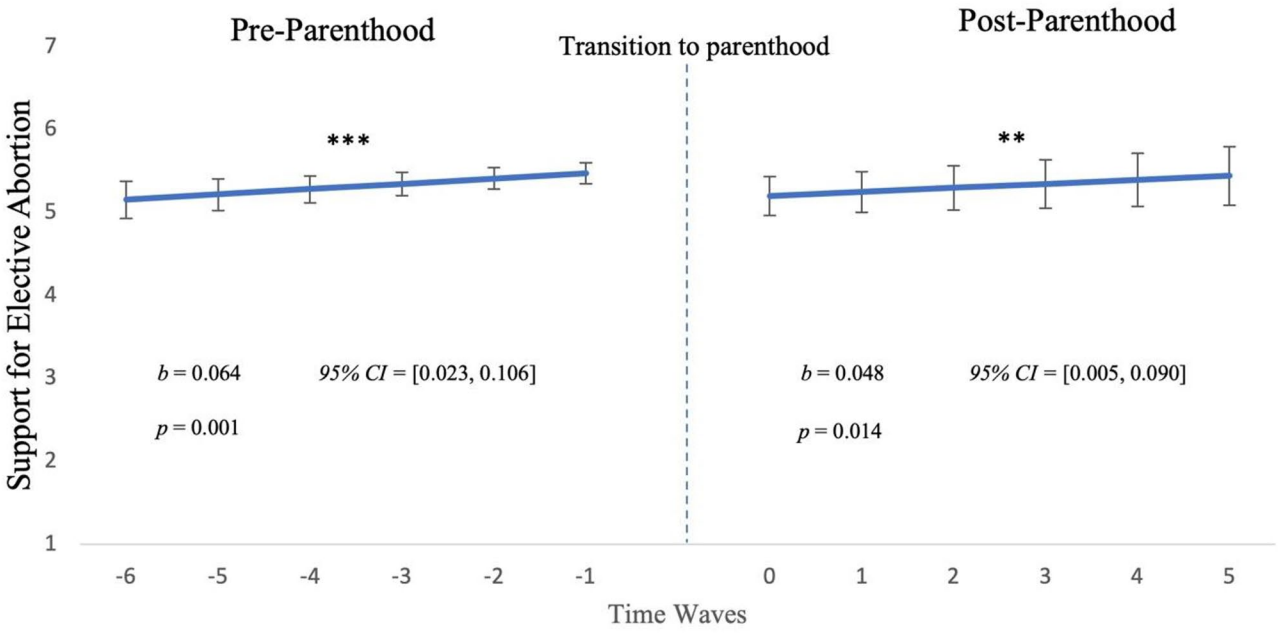


**Fig. 1** Event-aligned piecewise latent growth curve model estimating the rate of change in support for elective abortion for participants pre- (left panel) and post-(right panel) parenthood
*Note.* Time on the X-axis is measured in years. Results adjust for **(a)** participants' gender, **(b)** the age at which participants became parents, and **(c)** the year in which participants became parents.
$^{**}p < .01$. $^{***}p < .001$.

Together, these results demonstrate that support for elective abortion increased in the year(s) before participants became parents and the rate of change in support for elective abortion slowed after participants became parents.

We ran an identical set of analyses modelling the growth trajectories for traumatic abortion support in the year(s) (a) preceding and (b) following the transition to parenthood, PPP = 0.011, 95% CI [8.067, 106.152]. Figure 2 reveals that support for traumatic abortion significantly increased in the year(s) preceding the transition to parenthood ($b = 0.042$, 95% CI [0.010, 0.074], $p = .004$). However, as hypothesised, once participants became parents, the rate of change in support for traumatic abortion stabilised and no longer changed over time ($b = 0.027$, 95% CI [−0.004, 0.059], $p = .047$). These effects emerged after adjusting for participants' (a) gender and both the (b) age and (c) year in which they became parents. Thus, support for traumatic abortion increased in the year(s) preceding the transition to parenthood but ceased to change after participants became parents.

## Discussion

The current study investigated the impact the transition to parenthood has on support for elective and traumatic abortion. Although the extant literature demonstrates that abortion support differs among parents and non-parents (Elder & Greene, 2016), such research has relied exclusively on cross-sectional data. As such, it is unclear how the *same people's* attitudes towards elective and traumatic abortion change following the *transition* to parenthood. To address this oversight, we utilised longitudinal data from a nationwide random sample of adults to assess the rate of change in support for elective and traumatic abortion in the year(s) preceding and the year(s) following the transition to parenthood. Given that gender egalitarianism (see England et al., 2020; Gomes et al., 2022; Huang et al., 2019) and abortion support (Osborne et al., 2022) have risen over the last decade, we anticipated that support for *both* elective (Hypothesis 1a) and traumatic (Hypothesis 1b) abortion would increase over time before participants became parents. Conversely, because the transition to parenthood precedes an increase in conservatism (see Greenlee, 2010; Katz-Wise et al., 2010; Kaźmierczak and Karasiewicz, 2019) and parents are less supportive of abortion than non-parents (Elder & Greene, 2016; Osborne et al., 2022), we predicted that the rate of change in support for elective (Hypothesis 2a) and traumatic (Hypothesis 2b) abortion would either stabilise or start to decline following the transition to parenthood.

As expected, results indicate that support for *both* elective (Hypothesis 1a) and traumatic (Hypothesis 1b) abortion increased in the year(s) before participants became parents. These results further corroborate the trend towards greater gender egalitarianism over the last decade (see England et

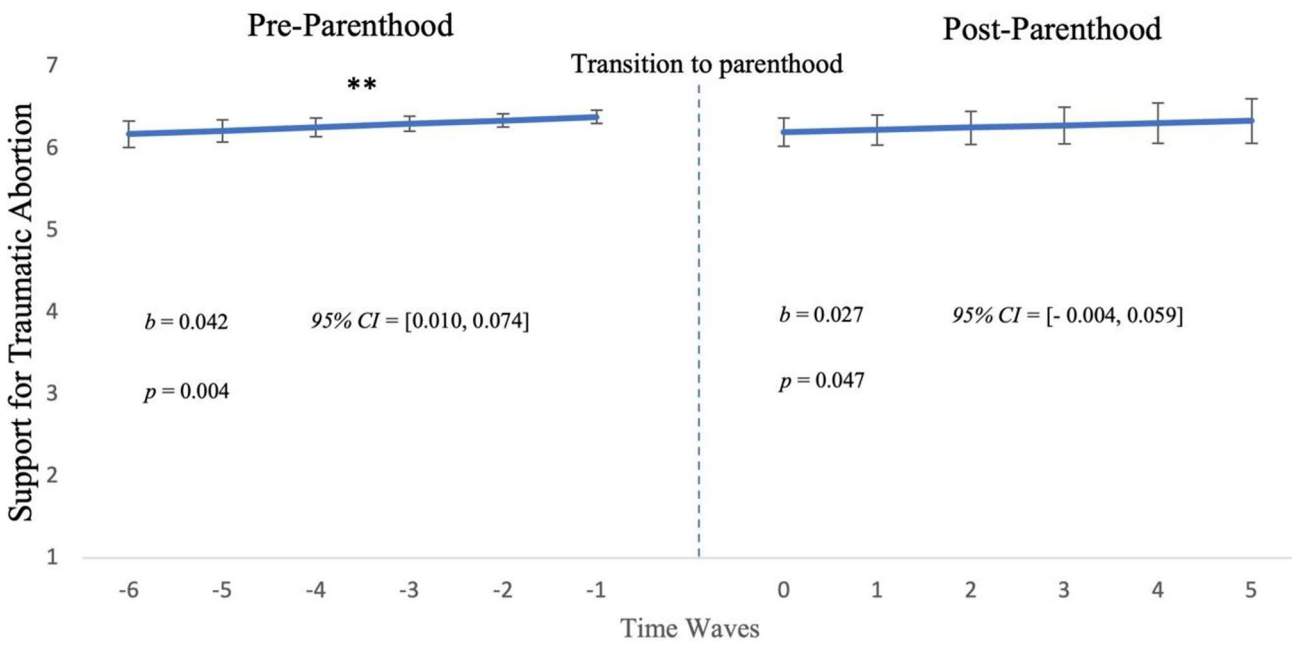


**Fig. 2** Event-aligned piecewise latent growth curve model estimating the rate of change in support for traumatic abortion for participants pre-(left panel) and post-(right panel) parenthood
*Note.* Time on the X-axis is measured in years. Results adjust for **(a)** participants' gender, **(b)** the age at which participants became parents, and **(c)** the year in which participants became parents.
$^{**}p < .01$.

al., 2020; Gomes et al., 2022; Huang et al., 2019) and capture a normative increase in support for both elective and traumatic abortion across time. That is, despite anti-abortion advocates' prolific attempts to undermine reproductive rights through judicial appointments and other means, the strives towards gender equality over the past decade appear to have simultaneously increased support for elective and traumatic abortion across time.

Contrary to Hypothesis 2a, our results for elective abortion support following the transition to parenthood were less dramatic than expected. Specifically, after partialing out the effects of our covariates (e.g., gender, age and year in which participants became parents), support for elective abortion continued to increase (albeit at a slower rate) after participants became parents. At first glance, these results appear inconsistent with prior literature showing clear differences in abortion support between parents and non-parents (see Elder and Greene, 2016; Osborne et al., 2022). Yet the small differences in the rate of change observed in the current study would produce substantive differences in support for elective abortion between parents and non-parents if extrapolated over time (e.g., a decade). Indeed, a 0.016 difference in the rate of change in abortion support across parents and non-parents would yield almost 1/5 of a point more support for elective abortion (on a 1 to 7 scale) amongst non-parents just a mere decade later. Nevertheless, it is notable that support for elective abortion continued to increase significantly following the transition to parenthood.

Whereas support for elective abortion continued to slowly increase after participants became parents, the rate of change in support for traumatic abortion slowed and consequently became non-significant following the transition to parenthood (consistent with Hypothesis 2b). Thus, extending upon the argument that parents are less supportive of traumatic abortion than non-parents (see Elder and Greene, 2016; Osborne et al., 2022), these results demonstrate for the first time that the *process* of becoming a parent impacts the rate at which support for traumatic abortion changes over time. It is, however, important to recall that support for traumatic abortion remains high across time, even after participants become parents.

Given the historically high levels of support for traumatic abortion over time (see Osborne et al., 2022), our results may simply reflect an 'asymptotic celling effect' for traumatic abortion support. Specifically, parents in our study may have been unable to express more support for traumatic abortion on our 1 to 7 scale. If this were the case, a similar stabilisation pattern should emerge in the general population. But contrary to this alternative explanation, Osborne and colleagues (2022) found that support for traumatic abortion steadily increased over a nine-year period amongst the larger random sample from which the current study is based. Although the quadratic effect found in this general growth model indicated that the rate of change in traumatic abortion support was decelerating slightly in the general population, the quadratic effect was too small to arrest the general linear growth rate (i.e., linear $b = 0.052$, $p < .001$ vs. quadratic $b = -0.004$, $p < .001$). Thus, the results from Osborne and colleagues suggest that the stabilisation in support for traumatic abortion observed in the current study is due to the transition to parenthood rather than a ceiling effect. Nevertheless, future work using censored estimates is needed to definitively rule out this alternative explanation.

By utilising longitudinal panel data from a nationwide random sample of adults, we have uniquely captured a large subsample of participants who became parents at some point during a 9-year period. Importantly, such data enables the use of a novel event-aligned piecewise latent growth curve model to estimate the rate of change in abortion support in the year(s) before and the year(s) after participants became parents. In doing so, the present study extends beyond retrospective accounts and cross-sectional comparisons of parents' versus non-parents abortion attitudes (e.g., Elder and Greene, 2016; Osborne et al., 2022) to assess how the *same people's* attitudes towards elective and traumatic abortion change following the *transition* to parenthood. To these ends, we clarify a previous tension in the literature by demonstrating that the transition to parenthood *precedes* a change in people's abortion attitudes (rather than vice versa).

## Limitations and Future Research Directions

Although we provide evidence of the temporal ordering of the relationship between parenthood and abortion attitudes, our results are nevertheless based on correlational data. Thus, we cannot infer definitively that the transition to parenthood *causes* changes in abortion support. Nonetheless, our use of an event-aligned piecewise latent growth curve model is arguably the closest this scholarship can get to establishing causality. Indeed, because we demonstrate that the *same people's* support for elective and traumatic abortion slowed or ceased to change *after* becoming parents, we can be rather confident that the *actual* transition to parenthood impacts abortion support.

One potential explanation for why rates of change in abortion support decelerated or stabilised after participants became parents is that the transition to parenthood promotes conservative identity changes that manifest in myriad ways, including an increase in anti-abortion attitudes. Indeed, the transition to parenthood is accompanied by increased support for traditional gender roles (Katz-Wise et al., 2010; Kazmiercak & Karasiewicz, 2019) and political conservatism (Greenlee, 2010). Testing the mediating and/

or moderating role of conservatism, however, is beyond the scope of our analytic approach. Future research could consider extending upon the present results with focus groups and qualitative interviews with parents and non-parents to further explicate *why* the transition to parenthood undermines abortion support.

On a related note, our results held after controlling for gender (among other important covariates). In doing so, the current study contributes to the surprising yet growing literature showing inconsistent gender differences in abortion attitudes (see Osborne et al., 2022, for a review). That said, our analyses only focussed on participants who became parents at some point during a nine-year period ($N = 1{,}266$). Despite being necessary for our analytic approach, the restricted sample size renders it impossible to explore the effect of gender in separate analyses (e.g., the sample size of men who became parents would be too small at any given year to produce reliable estimates of the rates of change in abortion support). Thus, although we adjusted for whether participants identified as a man or a woman, gender may still moderate the impact the transition to parenthood has on abortion support over time. With this caveat in mind, future research should continue investigating the surprisingly inconsistent relationship between gender and abortion attitudes.

We should also note that most of our sample were relatively new parents (i.e., in the first 1–2 years of parenthood). Parents' political attitudes may, however, change at different stages of parenthood (Hatemi & Ojeda, 2021). For instance, exposure to ultrasounds (Palmer, 2009) and the personification of the foetus during pre-natal doctor visits (Mikołajczak & Bilewicz, 2015) reduces abortion support. Conversely, parents may increase their support for abortion as their child becomes sexually active and/or as they begin to be influenced by their children's political views (Hatemi & Ojeda, 2021). Although our methodological approach provides critical insights into how the initial transition to parenthood shapes abortion support, future research would benefit from further investigating other important parental periods (i.e., the child's teenage years) to further explicate the impact of becoming a parent on abortion attitudes.

Due to space constraints in the NZAVS, our analyses used single-item measures of elective and traumatic abortion. Thus, we are unable to distinguish between the numerous motivations for traumatic (or elective) abortion. Although our use of single-item measures limits the generalisability of our results, the item we selected to capture traumatic abortion support (i.e., "Legalized abortion when the woman's life is endangered") is the most common reason for a traumatic abortion (Biggs et al., 2013). Moreover, the items used in the current study load strongly onto their respective latent constructs of elective and traumatic abortion support (see Osborne et al., 2022). As such, our items are strong correlates of their respective broader latent variable. Nevertheless, future studies may wish to utilise multi-item measures of elective and traumatic abortion support to distinguish between the myriad reasons why a person may seek to terminate a pregnancy.

It is also important to recognise that we do not include measures of prior experiences with abortion. Because those who have had experience with abortion are more supportive of both elective and traumatic abortion than those who have never had an abortion (see Osborne and Davies, 2012), future research could consider adjusting for prior experiences with abortion. On a related note, our analyses only examined participants who became parents at some point during the study. Consequently, we are unable to compare the rate of change in abortion support among those who became parents and those who remained non-parents. Although one alternative would be to compare our sample with a matched control group who did not become parents, the comparable 'non-transition' point for non-parents does not exist. That is, whereas we centre parents' data on the year in which they became a parent (which could be anywhere between 2012 and 2018), there is no "event" year upon which we could centre our analyses to assess how *not* transitioning to parenthood impacts peoples' abortion attitudes. Because abortion support is increasing over time across the population (Osborne et al., 2022), comparing participants who became parents in, say, 2018 with matched controls who started the study in 2011 when abortion support was generally lower across the population is problematic. Thus, comparing the abortion attitudes of those who became parents and those who remained non-parents is both unfeasible given our analytic approach and beyond the scope of the present study.

Finally, it is worth noting that the effect sizes in our study are small. Although it may be tempting to dismiss our results based on this potential criticism, Götz et al. (2022) argue that small effect sizes should be the norm (rather than the exception) in psychological research. Specifically, because complex attitudes (e.g., support for abortion) are influenced by a multitude of factors, it is highly likely that an individual predictor (e.g., the transition to parenthood) will have a small effect. Accordingly, a recent review illustrates the multitude of factors associated with abortion attitudes (see Osborne et al., 2022). That the transition to parenthood yields a comparatively small impact on rates of change in abortion support is consistent with both the complexity of the abortion debate and the general move toward acknowledging the importance of small effects.

## Practice Implications

Another reason why it may be premature to dismiss our results is that small effect sizes can have important practical implications (Götz et al., 2022). Indeed, aggerated across the population, small differences in abortion support can undermine reproductive autonomy over time. Given the various trigger laws further restricting abortion access that were enacted after the reversal of *Roe v. Wade* (e.g., see Edelman, 2022; Kekatos, 2022), the precarity of reproductive autonomy cannot be understated. Moreover, restrictions to reproductive health care can undermine women's educational achievement (Goldin & Katz, 2002; Pezzini, 2005) and increase crime rates over time (Donohue & Levitt, 2001, 2004). In fact, the reversal of *Roe v. Wade* has already increased the rates of life-threatening infections (e.g., sepsis) in pregnant people (Berg & Woods, 2023; Cohen & Bonifield, 2022) and heightened concerns about the potential overturning of *Obergefell v. Hodges* (i.e., the US Supreme Court decision extending marriage rights to same-sex couples; Aguilera, 2022). Given that most adults will transition to parenthood at some point, the small differences in rates of change identified here may have serious long-term implications for reproductive—and other progressive—rights in the 21st century. Our results, therefore, highlight the need for continued advocacy and policies that can withstand changes in the growth of parents' abortion support. Targeted interventions could also promote the need for bodily autonomy to those who are undergoing the transition to parenthood. In doing so, policymakers and activists alike could mitigate the effect of parenthood on abortion support over time.

## Conclusion

Despite the growing scholarship on abortion attitudes, research has yet to directly examine the impact that the transition to parenthood has on support for elective and traumatic abortion. By utilising longitudinal panel data to perform an event-aligned piecewise latent growth curve model, we are the first to investigate the rate of change in support for elective and traumatic abortion in the year(s) (a) preceding and (b) following the transition to parenthood. Consistent with the trend towards greater gender egalitarianism over time (see England et al., 2020; Gomes et al., 2022; Huang et al., 2019), our results demonstrate that support for elective and traumatic abortion gradually increased in the year(s) before participants became parents. Following the transition to parenthood, however, the rate of change in support for elective abortion slowed, whereas the rate of change in support for traumatic abortion stabilised and became non-significant. Our results thus suggest that the *process* of becoming a parent impacts the rate at which the *same peoples'* support for reproductive rights changes over time, particularly in the case of traumatic abortion.

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## Declarations

**Competing interests** This manuscript was completed as part of Eden V. Clarke's honour thesis supervised by Danny Osborne. All authors contributed to the study conception and design. The present study utilised data from the New Zealand Attitudes and Values Study (NZAVS) initiated by Chris G. Sibley. Analyses were performed by Danny Osborne. The first draft was written by Eden V. Clarke, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript. The preparation of this manuscript was supported by Performance Based Research Funds jointly awarded to Chris G. Sibley and Danny Osborne. The author(s) confirm that we have no potential (financial or non-financial) conflicts of interest to declare and that the data described in this paper stem from research conducted in adherence to the APA Code of Conduct. The data described in the paper are part of the New Zealand Attitudes and Values Study (NZAVS). The NZAVS is approved by the University of Auckland Participants Ethics Committee and is in accordance with the established ethics standards. Unfortunately, our ethics approval, which dates back to 2009 (and has been updated every three years), specifies that we are unable to post our dataset online—doing so would violate the conditions of our ethics approval. However, full copies of the NZAVS data files are held by all members of the NZAVS management team and advisory board. A de-identified dataset containing the variables analysed in this manuscript is available upon request from the corresponding author or any member of the NZAVS advisory board for the purposes of replication or checking of any published study using NZAVS data. The Mplus syntax used to test all models reported in this manuscript will be available on the NZAVS website upon publication: www.nzavs.auckland.ac.nz. Examining Changes in Abortion Attitudes Following the Transition to Parenthood.



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