The Consequences of Abortion Denial on Women's Physical and Mental Health*

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Abstract

This paper estimates the causal effects of abortion denial on women's mental, physical, and reproductive health using comprehensive longitudinal administrative health records from Colombia. We exploit the country's *tutela* system—which allows women to petition judges for abortion care—and the random assignment of cases to judges with differing propensities to deny abortion requests. Abortion denial reduces the probability of obtaining a recorded induced abortion by 50 percentage points (p.p.), yet fewer than half of prevented abortions translate into additional births. It causes large and persistent deterioration in mental health. In the quarter of denial, the probability of receiving a mental-health diagnosis increases by 26 p.p. and the probability of redeeming psychotropic medications rises by 7 p.p.; both effects remain clinically meaningful three years later. Abortion denial likewise causes large and lasting deterioration in physical and reproductive health, including persistent reproductive infections and reproductive morbidity, increased emergency department visits and hospitalizations driven by infectious and reproductive conditions, and higher mortality. These adverse health effects are substantially larger among women denied later in pregnancy, indicating that the health costs of abortion denial increase sharply with gestational age. The evidence is more consistent with lasting deterioration in women's reproductive health—including persistent infections and serious complications during subsequent pregnancies—than with sustained changes in contraceptive use or subsequent fertility. Overall, abortion denial has large, persistent, and clinically meaningful consequences for women's mental, physical, and reproductive health. **JEL:** I14, I18, J13.

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1 Introduction

Restrictions on abortion access remain the subject of intense policy debate in many countries. With the overturning of *Roe v. Wade* in the United States, major medical and psychological associations have warned that restricting abortion access may push women toward unsafe procedures and increase risks to their physical and mental health (APA, 2022; WHO, 2024; Xing et al., 2023). Anti-abortion groups, by contrast, argue that abortion itself harms women physically and psychologically—claims that conflict with the prevailing medical consensus (APA, 2008; National Academies of Sciences, Engineering, and Medicine, 2018). Despite the high policy stakes, rigorous causal evidence on the persistent effects of abortion denial on women's physical and mental health remains limited due to challenges in measurement and identification.

The strongest evidence to date comes from the U.S. Turnaway Study, which followed nearly 1,000 women who sought abortions and compared those denied care after exceeding gestational-age limits with those who obtained the procedure (Foster, 2020). While abortion denial was associated with substantially worse economic outcomes (Foster et al., 2018; Miller et al., 2023), researchers found no detectable long-term differences in self-reported mental or physical health (Biggs et al., 2018, 2017; Foster et al., 2015; Ralph et al., 2019). These null findings are notable given the well-established links between socioeconomic conditions and health (Chetty et al., 2016; Sun et al., 2021), and may reflect limited statistical power in later survey waves to detect uncommon but clinically important health events, as well as reliance on self-reported outcomes and potential biases arising from recall error, nonresponse, and selective attrition (Miller et al., 2020). As a result, important gaps remain in our understanding of the long-term health consequences of abortion denial.

This paper provides new causal evidence on the effects of abortion denial on women's physical and mental health by combining quasi-random variation in abortion denial with nationwide longitudinal administrative health records from Colombia. These records capture all interactions with the country's health system, including redeemed medications, consultations, procedures, emergency department (ED) visits, and hospitalizations. The administrative nature and nationwide scale of these records allow us to estimate effects on objectively measured, clinically important outcomes—including uncommon but severe health events—that are difficult to study in smaller survey-based samples.

During our study period, abortion was legally permitted on limited constitutional grounds, including when continuation of the pregnancy posed a risk to the woman's physical or mental health. Despite these legal protections, insurers and providers fre-

quently denied or delayed access. Women could challenge these decisions by filing *tutelas*—constitutional writs through which judges can order health insurers and providers to deliver timely care. More than 100,000 women sought abortions through *tutelas* in Colombia's four largest judicial districts—Bogotá, Medellín, Cali, and Barranquilla—and we link these records to national health data. Because cases are randomly assigned to judges within each judicial district and judges differ substantially in their propensity to deny abortion requests, we use a judge-leniency design to estimate the causal effect of abortion denial on subsequent health outcomes (Chyn et al., 2024; Kling, 2006).

Whether a woman is denied an abortion is close to a coin toss: roughly half of abortion-related *tutelas* are denied by the randomly assigned judge. Exploiting this quasi-random variation, we find that abortion denial substantially shifts pregnancy outcomes. It reduces the probability of obtaining a recorded induced abortion by 50 percentage points (p.p.). Less than half of prevented abortions translate into additional births: denial increases the probability of carrying the pregnancy to term by only 21 p.p. This discrepancy motivates our later investigation into how denied pregnancies are ultimately resolved.

Across a broad range of clinically verified outcomes, we find that abortion denial causes large and persistent deterioration across the full spectrum of women's health. The consequences range from mental-health diagnoses and psychotropic medication use, to persistent reproductive infections and morbidity, to increased ED visits and hospitalizations, and ultimately to higher mortality.

We begin with mental health. In the quarter of denial, the probability of any mental-health diagnosis rises by 26 p.p.—more than eight times the pre-denial mean—driven primarily by depression and anxiety. In the same quarter, the probability of redeeming psychotropic medications increases by nearly 7 p.p., raising it to more than three times the pre-denial mean. Although these effects attenuate over time, they remain substantial and clinically meaningful three years later. Even twelve quarters after denial, the quarterly probability of redeeming psychotropic medications remains 1 p.p. higher. Denial also increases the use of more intensive psychiatric treatments. Antipsychotic use rises by more than 4 p.p. and remains 0.6 p.p. higher twelve quarters later, indicating more intensive psychiatric treatment following abortion denial.[1]

The deterioration extends well beyond mental health, affecting women's reproductive and broader physical health. Abortion denial increases serious genitourinary and reproductive infections beginning in the quarter of denial, with these infections remaining

[1] Annual psychotropic medication use also remains 3 p.p. higher three years after denial. The magnitude of this effect is substantially larger than that reported after parental death, broadly comparable to those reported after spousal death and infertility, and somewhat smaller than that reported after rape (Adams et al., 2026; Bögl et al., 2024; Daly et al., 2025; Fadlon et al., 2026).

elevated for at least three years. Abortion denial also increases reproductive morbidity, including abdominal and pelvic pain and gynecologic disorders, for up to two years after denial.

The deterioration in reproductive health also translates into greater acute health-care utilization. ED visits and hospitalizations increase beginning in the quarter after filing and remain elevated for at least three years. Twelve quarters after denial, women are 7 p.p. more likely to visit the ED and 4 p.p. more likely to be hospitalized. These persistent increases are concentrated in infectious and reproductive conditions, closely mirroring the earlier evidence on persistent reproductive infections and morbidity. Consistent with these long-run effects, the cumulative probability of ever visiting the ED or being hospitalized within three years after filing is 11 p.p. and 17 p.p. higher, respectively. The deterioration ultimately extends to mortality. Abortion denial also increases all-cause mortality by 0.5 p.p., driven entirely by deaths from septicemia and other infections, consistent with prior evidence from Medellín (Londoño-Vélez and Saravia, 2025).

The average effects mask substantial heterogeneity across women. We examine heterogeneity by pre-determined characteristics, including gestational age at filing, prior mental-health history, prior parity, prior contact with a primary care physician (PCP), and health regime. The health consequences of abortion denial increase sharply with gestational age. Women denied later in pregnancy experience substantially larger increases in mental-health diagnoses and are the only group to exhibit persistent increases in ED visits and hospitalizations.

Most women seeking abortions through *tutelas* have no documented history of mental-health conditions before filing. Although abortion denial has larger effects among women with pre-existing conditions, they account for fewer than one-tenth of abortion seekers. Consequently, most of the overall mental-health burden arises among women with no prior diagnoses: among these women, denial increases mental-health diagnoses by 24 p.p. and psychotropic medication use by 5 p.p. Thus, abortion denial not only exacerbates existing mental-health vulnerabilities but also generates substantial new mental-health problems among women with no documented prior mental-health diagnosis.

Finally, we investigate why these health effects persist. We consider two competing explanations. One possibility is behavioral adjustment: women denied an abortion may subsequently alter their reproductive trajectories through greater contraceptive use or reduced subsequent fertility. The alternative is that abortion denial leads to lasting deterioration in women's reproductive health. We find little evidence supporting sustained behavioral adjustment. Instead, abortion denial increases serious complications in subsequent pregnancies, while persistent reproductive morbidity is greatest among women

who subsequently become pregnant. Taken together, these findings suggest that the persistent health consequences of abortion denial arise because abortion denial leaves women less healthy, rather than because it permanently changes women's reproductive behavior.

These results contribute to the literature on the mental health consequences of abortion and abortion restriction, recently reviewed by Reardon (2018), Arboleda (2024), Littell et al. (2024), and National Academies of Sciences, Engineering, and Medicine (2018).[2] Most medical studies rely on observational designs and generally conclude that persistent differences in mental health are largely explained by sociodemographic characteristics, prior mental-health history, and perceived stigma rather than abortion itself.

Our paper instead estimates the causal effects of abortion denial on women's mental, physical, and reproductive health. The closest prior work is the U.S. Turnaway Study (Biggs et al., 2018, 2017; Foster et al., 2015). Researchers documented greater short-run psychological distress following denial, particularly among women with prior mental-health conditions, but found little evidence of long-run effects. Using nationwide longitudinal administrative health records covering more than 100,000 abortion seekers, we document large and persistent increases in clinically verified mental-health diagnoses and psychotropic medication use that remain economically meaningful three years after denial. Compared with the Turnaway Study, our nationwide administrative data substantially increase statistical power while measuring clinically verified diagnoses, treatments, and redeemed medications rather than relying primarily on self-reported outcomes. These advantages allow us to study uncommon but clinically important health events with much greater precision.

Our findings also substantially extend the literature on the physical and reproductive health consequences of abortion and abortion restrictions (Bartlett et al., 2004; Clarke and Mühlrad, 2021; Farin et al., 2024; Gardner, 2024; Gerdts et al., 2016; Gipson et al., 2008; Grossman et al., 2008; Ralph et al., 2019; Stevenson, 2021; Upadhyay et al., 2015; Zane et al., 2015). Most existing evidence relies either on policy variation or on comparisons between women who obtained abortions and those denied care. The main individual-level comes from the Turnaway Study, which compares women who obtained abortions with women denied abortions who carried their pregnancies to term (Ralph et al., 2019), raising concerns about selection. In Londoño-Vélez and Saravia (2025), we show that abortion denial increases mortality and worsens self-reported physical health among survivors. Building on that earlier work, we use nationwide administrative health records from four judicial districts to document persistent increases in reproductive morbidity, ED visits, and hospitalizations following abortion denial. We further provide suggestive evidence that

[2] See also Steinberg et al. (2019), Liu et al. (2023), and Abrahamsson and Barschkett (2026).

these persistent health effects are more consistent with lasting deterioration in women's reproductive health than with sustained changes in reproductive behavior.

Taken together, our findings provide, to our knowledge, the first comprehensive causal evidence on the persistent mental, physical, and reproductive health consequences of abortion denial based on nationwide longitudinal administrative health records and clinically verified health outcomes. By combining credible causal identification with comprehensive, clinically verified measures of health, our analysis substantially expands the evidence on the long-run consequences of abortion denial for women's health while also shedding light on the mechanisms underlying these persistent effects.

2 Institutional Background

2.1 Colombia's Abortion Law and Persistent Barriers to Access

Until 2006, Colombia criminalized all abortions without exception (Law 95/1936): women faced up to 4.5 years in prison and providers up to 10 years. In 2006, the Constitutional Court ruled that a total ban violated women's fundamental constitutional rights—including dignity, reproductive autonomy, equality, life and health (Decision C-355)—and decriminalized abortion under three circumstances: (1) when a physician certifies severe fetal malformations incompatible with life; (2) when the pregnancy results from rape, incest, or non-consensual insemination or embryo transfer, reported to the appropriate authorities; and (3) when continuation of the pregnancy poses a risk to the woman's life or physical or mental health, as certified by a physician.[3] The Court imposed no gestational-age limits. Subsequent regulations and Constitutional Court decisions required insurers and providers to ensure timely access to abortion services free of charge. In 2022, Colombia further decriminalized abortion on request up to 24 weeks of gestation (Sentence C-055); after 24 weeks, the 2006 constitutional grounds continue to apply.

Despite the 2006 ruling, substantial barriers to legal abortion persisted. Because abortion remained illegal outside the constitutional grounds, many providers continued to refuse abortions, often invoking legally protected conscientious objection or misapplying the law. For example, some providers disregarded risks to women's mental health or imposed gestational-age limits that were not permitted under the Constitutional Court ruling. Health insurers, which were responsible for coordinating care, also frequently

[3] Subsequent Constitutional Court decisions interpreted the health exception broadly, consistent with the World Health Organization's definition of health. The Court did not require that the risk to health be life-threatening or irreversible; a risk to mental health alone was sufficient (Fiscalía General de la Nación, 2016).

delayed or denied access by failing to connect women with willing providers. Common administrative barriers included inadequate referral networks, rejection of out-of-network certifications, disregard for psychological assessments, questioning of sexual assault claims, and unnecessary requests for documentation or judicial authorization. Together, these barriers produced substantial delays and outright denials of abortion care (Diaz Amado et al., 2010; Baum et al., 2015; Brack et al., 2017; DePiñeres et al., 2017; Fink et al., 2016; González-Vélez and Castro, 2017; Médicos Sin Fronteras, 2019; Stifani et al., 2018). As a result, thousands of women filed *tutelas* to enforce their constitutional right to access a legal abortion.

2.2 Seeking Abortions Through *Tutelas*

When women who qualify for a legal abortion face barriers to obtaining care, they may enforce their rights through *tutelas*, a fast-track constitutional remedy designed to protect fundamental rights when delay would cause irreparable harm. Established under Article 86 of Colombia's 1991 Constitution, the *acción de tutela* allows individuals to seek immediate judicial protection when a fundamental constitutional right is violated or threatened by a public authority or by private actors providing public services, including health insurers and providers.

The *tutela* process is summary, informal, and expedited. It does not require legal representation and can be filed through a simple written petition describing the parties, the relevant facts, and the right allegedly violated. In practice, judges decide cases based on the written record, without hearings or direct interaction with the claimant, and must issue a ruling within ten days—either granting relief, denying the claim, or dismissing the petition as inadmissible. Claimants are typically given three days to appeal (*impugnación*) or correct incomplete filings, and any appeal must be resolved within twenty days of the initial filing. Women may appeal an initial *tutela* ruling to a higher court. In practice, however, appeals are relatively uncommon (14.9% of cases in our sample). Moreover, fewer than 3% of appealed cases overturn the initial ruling, implying that fewer than 0.5% of all initial rulings are ultimately reversed.

Rulings are immediately enforceable, and noncompliance may trigger contempt sanctions, including fines or imprisonment. In practice, extensive evidence shows that women frequently rely on *tutelas* to obtain abortion services when insurers or providers obstruct access (Londoño-Vélez and Saravia, 2025; Stifani et al., 2018).

Cases are assigned to judges through the judiciary's *reparto* system, an administrative assignment mechanism designed to promote impartiality, balance caseloads, and en-

hance transparency. Claimants may file *tutelas* before a court with territorial jurisdiction—typically where they reside, where the alleged violation occurred, or where its effects are felt—but they do not choose the individual judge who hears the case. In the four largest judicial districts we study, cases are electronically registered and assigned through the judiciary's case-management system according to national *reparto* rules and implementing regulations issued by the Consejo Superior de la Judicatura. Assignment is designed to distribute cases equitably and randomly among eligible judges. Because judges differ substantially in their propensity to deny abortion requests, this process generates plausibly exogenous variation in abortion denial that we exploit in our empirical analysis.

3 Data and Summary Statistics

Our analysis draws on several administrative data sources:

1. **Abortion-rights *tutelas*, judges, and judicial outcomes (SAMAI, Consejo de Estado; Corte Constitucional).** We use the universe of abortion-related *tutelas* filed between 2006 and 2022 in Colombia's four largest judicial districts administering cases through an automated case-management system: Bogotá (Bogotá D.C. and La Calera), Medellín (Medellín, Envigado, Bello, Itagüí), Cali, Barranquilla. This system has assigned cases to judges randomly throughout the entire study period. Together, these districts account for more than 108 thousand abortion-rights *tutelas*, representing the overwhelming majority of all such cases filed nationwide. The records include the petitioner's full name and municipality of residence, the judge assigned to the case, and their decision (granted, denied, or dismissed as inadmissible).[4] Table A.1 summarizes additional information extracted from the texts of abortion-related *tutelas*, including the defendant named in the petition, gestational age at filing when reported, and the legal grounds invoked in support of the abortion request.

2. **Health outcomes.** We use longitudinal microdata from the Ministry of Health and Social Protection's *Sistema Integral de Información de la Protección Social* (SISPRO), an integrated information system that consolidates administrative records on health service utilization (RIPS), insurance enrollment (BDUA), demand management (GD), and other health-sector databases. The system records all health care encounters with Colombia's health system, including outpatient visits, emergency care,

[4] The data do not report the *tutela* filing date, only the date the case was received by the Constitutional Court. We therefore impute the filing date as ten days earlier, consistent with the requirement that judges rule within ten days.

hospitalizations, procedures, and redeemed prescription medications. Health care providers—including primary care centers, clinics, and hospitals—report detailed information on each encounter. Diagnoses are recorded using the International Classification of Diseases, Tenth Revision (ICD-10). Medications dispensed through insurers are coded according to the Anatomical Therapeutic Chemical (ATC) system. Procedures are identified using six-digit procedure codes. Data are available from 2009 through 2025.

We identify recorded induced abortions using abortion-related medications (misoprostol, mifepristone, dinoprostone) and procedures rather than diagnostic codes. Although ICD-10 codes exist for induced abortion (e.g., O04), providers frequently record abortion-related care under alternative diagnoses, including spontaneous abortion (O03), consistent with documented underreporting and misclassification of induced abortions in administrative health records (Suh, 2014). We therefore classify a recorded abortion event as induced when administrative records indicate the use of these medications or the performance of abortion-related procedures. Because some of these medications (e.g., dinoprostone) and procedures (e.g., uterine curettage and vacuum aspiration) are also used for labor induction, delivery, and the management of postpartum complications, we do not classify an observation as an induced abortion if vital statistics records indicate that the woman gave birth within nine months of filing the *tutela*.[5] Appendix B lists the medications and procedures included in the classification algorithm.

Because SISPRO does not directly report gestational age, we infer whether pregnancies are in the first trimester or at later gestational ages from the timing and type of prenatal procedures, including routine prenatal care, diagnostic testing, fetal monitoring, and obstetric imaging. Appendix B describes the classification algorithm and reports the procedure codes used to construct this measure. Among women for whom gestational age is reported in the *tutela* petition and can also be inferred from procedure codes, the two measures agree in 95.4% of cases (correlation = 0.946; Table A.2), providing strong validation of our procedure-based measure. Using this approach, we classify approximately two-thirds of pregnancies as occurring either during the first trimester or at later gestational ages. Gestational age cannot be inferred for the remaining women because no trimester-specific prenatal procedures are recorded in the administrative data. Rather than excluding these observations,

[5]For the summary statistics reported in Column (5) of Table I, abortions are not defined relative to the *tutela* filing date. We therefore apply the analogous rule and exclude observations in which vital statistics records indicate that the woman gave birth within nine months of the recorded abortion event.

we retain them as a separate category throughout the heterogeneity analysis. As shown below, women whose gestational age cannot be inferred experience effects similar to those filing in the first trimester.

3. **Births and deaths.** We use Vital Statistics Records collected by Colombia's National Statistics Agency (DANE). These records comprehensively capture all registered live births and deaths reported by hospitals, clinics, physicians, nurses, and other health professionals nationwide from January 2007 through December 2024.

Summary Statistics. Table I reports summary statistics for the study sample. The analysis sample consists of 108,126 abortion-related *tutelas* filed by 103,345 women between 2011 and 2022. We restrict the analysis to the first *tutela* filed during each pregnancy, so the unit of observation throughout the analysis is the pregnancy. Column (1) presents baseline characteristics for the analysis sample.

Before filing, 80% of women had at least one recorded interaction with the health-care system. Administrative health records include age, health-insurance regime, and place of residence. Consistent with population size, most *tutelas* were filed in Bogotá (54%), followed by Medellín (26%), Cali (12%), and Barranquilla (9%). At filing, women were nearly 25 years old, and 64% were enrolled in the subsidized health-insurance regime (*régimen subsidiado*), which serves poor and vulnerable populations. The vast majority lived in urban areas: 93% in municipal seats, 2% in other populated centers, and 3% in rural areas.

Using the procedure described in Appendix B, we infer gestational age at filing for nearly two-thirds of the sample. Among these women, 55%—corresponding to 35% of the full sample—filed in the first trimester, while the remaining 45%—29% of the full sample—filed later in pregnancy.

The table also reports pre-filing health characteristics measured one to two years before filing, including indicators for any ED visit, hospitalization, mental-health diagnosis, and redeemed psychotropic medications. During this period, 21% of women had at least one ED visit, 11% were hospitalized, 9% had a recorded mental-health diagnosis, and 6% redeemed psychotropic medications.

Columns (2) and (3) compare women whose abortion-rights *tutela* was denied with those whose case was granted or deemed inadmissible, and Column (4) reports p-values for equality tests. Overall, 48% of cases were denied, implying that whether abortion is denied is close to a coin toss. Denied and non-denied women differ along several observable dimensions. Because judges in Bogotá are less likely to deny abortion-related *tutelas*, denied women are less likely to have filed there. They are also more likely to live outside

municipal seats. In addition, they are less likely to have an inferred gestational age and slightly less likely to have experienced a prior hospitalization. At the same time, denied women exhibit worse pre-existing mental-health profiles: they are more than twice as likely to have a recorded mental-health diagnosis and also more likely to have redeemed psychotropic medications prior to filing. These differences underscore the importance of our judge-leniency design, which isolates quasi-random variation in denial decisions rather than relying on raw comparisons across women.

Women who obtain abortions without filing a *tutela* provide a useful comparison group. Column (5) reports summary statistics for approximately 70,100 women who obtained a recorded induced abortion without filing an abortion-related *tutela* in the previous nine months. Because some of the medications and procedures used to identify induced abortions are also used in the management of spontaneous abortions (miscarriages), this comparison group may include some women receiving care for spontaneous abortions. This concern is less relevant among *tutela* filers, for whom these medications and procedures are observed following a request for an induced abortion. Consequently, the comparison group should be interpreted as an upper bound on the number of induced abortions obtained without filing a *tutela*. Even under this conservative assumption, the number of women seeking abortions through *tutelas* exceeds the number of recorded induced abortions obtained without filing a *tutela* by roughly 50%.

The *tutela* system therefore constitutes an important channel for accessing abortion care. Although only 26.4% of abortion-related *tutelas* result in a recorded induced abortion within nine months—reflecting both high denial rates and incomplete take-up among women granted relief—28% of all recorded induced abortions occur following the filing of an abortion-related *tutela*. Thus, a substantial share of abortion care in our setting is obtained only after women resort to constitutional litigation.

Women seeking abortions through *tutelas* also differ markedly from women obtaining abortions without litigation. Compared with women in the non-*tutela* comparison group, they are younger, poorer, and less connected to the health-care system, as reflected in higher enrollment in the subsidized health-insurance regime and lower rates of prior health-care utilization. They are also less likely to live in urban areas and more likely to have pre-existing mental-health conditions. These patterns suggest that women who rely on *tutelas* to access abortion tend to be more socioeconomically disadvantaged and medically vulnerable than women who obtain abortions without resorting to litigation.

Differences remain substantial even among women who ultimately obtain recorded induced abortions. On average, 20.6 days (median: 11 days) elapse between filing an abortion-related *tutela* and obtaining a recorded induced abortion. As a result, women

who obtain abortions through *tutelas* receive care at substantially later gestational ages. Whereas 46% of women obtaining a recorded induced abortion without filing a *tutela* do so during the first trimester, only 37% of *tutela* filers remain in the first trimester by the time they obtain care. These differences highlight both the barriers to abortion access that prompt women to file *tutelas* and the additional delays before care is ultimately received.

4 Empirical Strategy

We estimate the causal effect of abortion denial by exploiting the random assignment of abortion-related *tutelas* to judges and substantial heterogeneity in judges' propensity to deny abortion requests. The unit of observation is the pregnancy, defined by the first abortion-related *tutela* filed during that pregnancy.

During our study period, the analysis sample consists of 108,126 abortion-related *tutelas*, which were adjudicated by 1,773 judges. Cases are randomly assigned to judges according to the court's case-assignment system. Our empirical specification compares outcomes across pregnancies assigned to judges with different denial propensities within judicial district-by-office-by-quarter cells.

Figure I illustrates the distribution of judges' leave-one-out denial propensities after residualizing judicial district-by-office-by-quarter fixed effects. While approximately half of abortion-related *tutelas* are denied on average, judges' denial propensities vary substantially: the gap between the 10th and 90th percentiles is 34.7 p.p.

To leverage this variation, we construct a leave-one-out measure of each judge's denial propensity by calculating the mean denial rate among all other abortion-related *tutelas* assigned to the same judge. Under random assignment, differences in this measure capture exogenous variation in abortion denial. We then estimate the following instrumental variables (IV) specification:

$$Denied_i = \gamma Z_{j(i)} + \delta_{o(it)} + e_{it}\,, \tag{1}$$

$$Y_{it} = \beta Denied_i + \delta_{o(it)} + \epsilon_{it}\,, \tag{2}$$

where $Denied_i$ equals one if pregnancy i's abortion-related *tutela* was denied. When multiple *tutelas* are filed during the same pregnancy, we retain only the initial filing, and all outcomes are measured relative to that filing. $Z_{j(i)}$ denotes the leave-one-out denial propensity of judge j, $\delta_{o(it)}$ denotes judicial district-by-office-by-quarter fixed effects, and Y_{it} is the outcome measured for case i at time t.

We estimate this specification using the unbiased jackknife instrumental variables es-

timator (UJIVE) proposed by Kolesár (2013). UJIVE is well suited to settings with many judges because it corrects the finite-sample bias that can arise when the instrument is constructed from estimated leave-one-out judge-specific denial rates. Estimating the model with the conventional leave-one-out judge-leniency instrument yields nearly identical substantive conclusions (Section 5.5).

As an alternative source of identification, we use an indicator for whether the randomly assigned judge is female. Londoño-Vélez and Saravia (2025) show that female judges are substantially less likely than male judges to deny abortion-related *tutelas* in Medellín. We find a similar qualitative pattern in other judicial districts, although the magnitude of the sex gap varies considerably across locations, consistent with evidence of geographic heterogeneity in judicial attitudes toward abortion (Lleras-Muney et al., 2026). To accommodate this heterogeneity, we interact the female-judge indicator with judicial district. Because the judge-stringency instrument provides substantially greater identifying variation in abortion denial, we use it as our primary specification and report estimates based on the judge-sex instrument as an alternative identification strategy in Section 5.5.

Under the standard IV assumptions, our estimates identify a local average treatment effect (LATE) for compliers (Imbens and Angrist, 1994). In our primary specification, compliers are pregnancies whose abortion denial status depends on the randomly assigned judge. Thus, our estimates capture the effect of abortion denial for this group of pregnancies. We also report estimates using judge sex as an alternative instrument; in that case, compliers are pregnancies whose abortion denial status depends on whether they are assigned to a male or a female judge.

The remainder of this section discusses the four identifying conditions underlying the IV strategy—relevance, exogeneity, exclusion, and monotonicity—and presents institutional and empirical evidence supporting each assumption.

1. Relevance. Figure I plots a local linear regression of residualized abortion denial on residualized judge stringency (in blue), showing a strong and approximately linear relationship between the instrument and abortion denial. A linear regression yields a coefficient of 0.913 (s.e. = 0.010), indicating that assignment to a more stringent judge increases the probability of denial almost one-for-one.

Table A.3 further reports first-stage estimates for both instruments. Column (1) shows that judge stringency strongly predicts abortion denial, with a Kleibergen–Paap Wald F-statistic of 8,058.89, eliminating concerns about weak instruments. Column (2) shows that judge sex is also a relevant predictor: female judges are 6.3 p.p. less likely than male judges to deny abortion-related *tutelas*.

2. Exogeneity. Our identification strategy relies on the assumption that cases are as-

good-as-randomly assigned to judges. Figure I provides a simple visual diagnostic consistent with this assumption: the predicted probability of abortion denial—constructed from a regression of denial on all observed covariates—is flat across the full support of the instrument.

Figure II provides complementary balance tests. As expected, observable characteristics strongly predict abortion denial: a joint F-statistic of 137.5 rejects the null that baseline characteristics do not predict denial ($p < 0.001$). In contrast, observable characteristics do not predict assignment to judges with different denial propensities. None of the 15 baseline characteristics varies systematically with judge stringency, and we fail to reject the joint null that all coefficients are zero ($p = 0.32$). An analogous exercise using our alternative judge-sex instrument yields the same conclusion: none of the coefficients is statistically significant, and the joint null cannot be rejected ($p = 0.94$; Table A.4). Together, these results are consistent with quasi-random assignment of cases to judges.

We next perform analogous balance tests using the same UJIVE specification employed throughout the paper, following (Goldsmith-Pinkham et al., 2025). Specifically, for each baseline characteristic, we estimate our baseline UJIVE specification treating that characteristic as the outcome. The results again support random assignment. None of the 15 baseline characteristics is statistically significant at the 10% level, and all estimated imbalances are economically negligible. These findings provide further evidence that judge assignment generates plausibly exogenous variation in abortion denial.

We further assess the random assignment assumption by testing whether baseline claimant characteristics vary systematically across individual judges. Specifically, we estimate regressions of baseline claimant characteristics on judge fixed effects:

$$X_i = \sigma_{j(i)} + \delta_{o(i)} + \varepsilon_i \,, \tag{3}$$

where X_i denotes baseline characteristics (e.g., age), $\sigma_{j(i)}$ are judge fixed effects, $\delta_{o(i)}$ are district-by-office-by-quarter fixed effects, and ε_i is an error term. A joint F-test of the judge fixed effects assesses whether claimants assigned to different judges differ systematically in their observable characteristics. Whereas Figure II evaluates balance with respect to the continuous judge-stringency instrument, this specification tests balance across individual judges. Table II again provides no evidence of systematic imbalance. For all 15 baseline characteristics, we fail to reject the null that judge fixed effects are jointly equal ($p = 0.59$).

3. Exclusion. The exclusion restriction requires that judges affect women's outcomes only through abortion denial. This assumption is plausible in our setting. First, judges determine access to abortion but play no role in subsequent healthcare delivery. We focus

exclusively on abortion-related *tutelas*, and judges become involved only after a woman has sought an abortion and filed a *tutela*. Their role is limited to adjudicating the case—granting, denying, or declaring it inadmissible. Cases are decided without hearings, so judges do not interact directly with claimants. Nor do they select providers, influence subsequent medical treatment, or determine the timing or content of care conditional on the ruling. Together, these features make it plausible that judges affect subsequent outcomes only through abortion denial. Consistent with this interpretation, we implement the tests proposed by Frandsen et al. (2023) and find no evidence of violations (Table A.5).

4. Monotonicity. Using judge stringency as an instrument requires that women denied by a given judge would also have been denied by a more stringent judge, while women granted an abortion would not have been denied by a less stringent judge. This assumption could be violated if judges are relatively strict for some types of cases or women and more lenient for others.

This concern is mitigated because judge stringency is constructed exclusively from abortion-related *tutelas*. We assess the plausibility of the monotonicity assumption in two ways. First, a necessary implication of widespread monotonicity violations would be negative first-stage estimates in some observable subgroups. Table A.6 shows uniformly positive first stages across all subsamples. Second, we implement the tests proposed by Frandsen et al. (2023) and find no evidence of violations (Table A.5). Taken together, these findings are consistent with monotonicity.[6]

Complier Characteristics Table A.7 reports the baseline characteristics of compliers—women whose probability of abortion denial changes when assigned to judges with different levels of stringency. Compliers closely resemble the full sample (Column 1 of Table I) along most observable dimensions. Compared with the full sample, they are somewhat more likely to have filed in Bogotá and slightly less likely to have a documented history of mental-health conditions before filing, but differences are otherwise modest. Overall, these patterns indicate that compliers are similar to the broader population of women seeking abortions through *tutelas* on observed characteristics. Accordingly, our estimates are likely to be informative about the effects of abortion denial for the broader population of women seeking abortions through *tutelas*, rather than only for a narrow or atypical subset whose treatment status depends on judge assignment.

[6] Under the alternative approach, monotonicity requires that women denied by a female judge would also have been denied by a male judge. Figure A.1 shows that denial rates overlap across male and female judges, so pairwise monotonicity need not hold for the judge-sex instrument. We therefore view estimates based on judge sex as a secondary exercise rather than a primary specification.

5 Results

5.1 Pregnancy Outcomes

We begin by examining whether abortion denial actually prevents abortions and how denied pregnancies are ultimately resolved. Figure III addresses the first question. Panel (a) presents UJIVE estimates with 95% confidence intervals for the probability of obtaining a recorded induced abortion in each quarter surrounding the filing of an abortion-rights *tutela*. Prior to filing, abortion rates are close to zero and do not differ between denied and non-denied pregnancies. After filing, abortion denial leads to an immediate and substantial reduction in access to recorded induced abortion.

Panel (b) asks whether abortions prevented in the filing quarter are subsequently observed in the administrative records. It reports effects on the cumulative probability of ever obtaining a recorded induced abortion. The reduction in access remains essentially unchanged three years later: abortion denial lowers the cumulative probability of ever obtaining a recorded induced abortion by 49.3 p.p., nearly identical to the contemporaneous effect. Together, the two panels indicate that abortions prevented in the filing quarter are almost never observed later in the administrative records.

Table III summarizes these effects over the first nine months after filing and examines how pregnancies are ultimately resolved. Abortion denial reduces the probability of obtaining a recorded induced abortion by 49.8 p.p. Since 48.5% of non-denied pregnancies obtain a recorded induced abortion within nine months, this estimate implies that abortion denial almost completely eliminates access to recorded induced abortions through the formal health system, consistent with institutional features of the Colombian health system that limit women's ability to obtain abortion care elsewhere within the formal sector.

Table III further decomposes these effects by abortion method. The reduction is concentrated in D&C and related uterine evacuation procedures (-47.0 p.p., or 94% of the total reduction), while medication abortion or vacuum aspiration declines by only 3.7 p.p. Although some women ultimately obtain abortions after filing, they do so approximately three weeks later, on average. This delay likely contributes to the observed shift toward procedural methods.

Finally, Table III examines broader pregnancy outcomes within nine months of filing. Abortion denial increases the probability of carrying the pregnancy to term by 21.4 p.p., more than doubling the probability of a recorded live birth relative to the non-denied group (16.4%). However, it increases the residual pregnancy-outcome category by 28.0 p.p., while having essentially no effect on fetal death. Thus, fewer than half of recorded

abortions prevented by abortion denial translate into additional recorded live births.[7]

The remaining pregnancies are not observed in the administrative data as recorded live births, induced abortions, or fetal deaths. This residual category may reflect pregnancies resolved through abortions that are not captured in the administrative data, but it may also include migration outside the country, a small number of births that cannot be linked to the mother in Vital Statistics, or other data limitations. Although some component of the residual category may reflect these possibilities, they are unlikely to fully explain the large discrepancy between recorded abortions prevented and additional recorded live births. We therefore interpret it as evidence that many denied pregnancies are resolved through channels not directly observed in the administrative data, rather than as a direct measure of informal abortion. This finding motivates the mechanism analysis in Section 7, where we examine whether health consequences differ according to how pregnancies are ultimately resolved.

5.2 Mental Health

Figure IV examines the effects of abortion denial on mental health before and after women file an abortion-rights *tutela*. Panel (a) reports effects on the probability of receiving a mental-health diagnosis. Prior to filing, there are no detectable differences. Immediately after filing, abortion denial increases the probability of receiving a mental-health diagnosis by 25.6 p.p.—more than eight times the pre-denial mean of 3.5%. The increase in mental-health diagnoses is also highly persistent: the effect declines over time but remains positive and statistically significant twelve quarters later (0.5 p.p.), indicating that the mental-health consequences of abortion denial are not merely short-lived. This persistence also translates into substantial cumulative impacts: abortion denial increases the probability of ever receiving a mental-health diagnosis by 20.1 p.p. relative to a baseline of 14.0% (Figure A.2).

These findings are unlikely to reflect strategic diagnoses or reporting. Event time is measured relative to the *tutela* filing date, by which point supporting medical documentation has already been submitted. Moreover, mental-health diagnoses increase significantly more among women who do not appeal (Figure A.3), making it unlikely that the results are driven by strategic behavior during the appeals process.

The increase in mental-health diagnoses is driven primarily by depression and anx-

[7] For comparison, 70% of women denied abortions in the U.S. Turnaway Study ultimately gave birth (Foster, 2020). This descriptive share is not directly comparable to our estimate, which measures the number of additional recorded live births generated per recorded abortion prevented by abortion denial among compliers, rather than the fraction of denied women who ultimately give birth.

iety. Abortion denial increases the probability of receiving a depression diagnosis in the denial quarter by 14.4 p.p. and an anxiety diagnosis by 15.4 p.p. (Table IV). We find little evidence of effects on postpartum depression, while estimates for PTSD and other mental-health diagnoses are small and only marginally significant. These short-run effects translate into substantial cumulative increases in both conditions. Overall, abortion denial increases the probability of ever receiving an anxiety diagnosis by 13.5 p.p. and a depression diagnosis by 11.1 p.p. (Figure A.2), with elevated anxiety remaining statistically significant twelve quarters after filing.

Panel (b) of Figure IV examines redeemed psychotropic medication use. One year before filing, only 3% of denied women redeemed psychotropic medications. Following denial, this probability increases by 6.6 p.p., a 220% rise relative to baseline. Although the effect attenuates over time, it remains economically meaningful and statistically significant twelve quarters later (1 p.p., or 33%).[8]

If anything, these estimates likely understate the increase in underlying mental-health morbidity. Because many denied women remain pregnant after filing, concerns about fetal safety may limit the use of some psychotropic medications during pregnancy. Consistent with this interpretation, the increase in clinically verified mental-health diagnoses is substantially larger than the increase in redeemed psychotropic medications. Moreover, psychotropic medication use remains elevated long after the index pregnancy has ended, indicating that the observed increase reflects persistent mental-health deterioration rather than temporary changes in prescribing during pregnancy.[9]

The final column of Table IV examines antipsychotic medications, which are typically prescribed for severe psychiatric conditions and therefore reflect more intensive psychiatric treatment. Abortion denial increases the probability of redeeming antipsychotics by 4.3 p.p.—more than a sevenfold increase relative to baseline—and the effect remains positive twelve quarters later (0.6 p.p., or 100%). These findings suggest that abortion denial affects not only the likelihood of treatment but also its intensity.

Figure A.4 shows that abortion denial substantially increases the use of specialty mental-health services. At baseline, consultations with both psychologists and psychia-

[8] Table A.8 reports annual estimates to facilitate comparison with prior studies. Three years after denial, annual psychotropic medication use remains 3.0 p.p. higher. This effect is substantially larger than that reported following parental death (0.5 p.p.; Daly et al., 2025), broadly comparable to those following spousal death (2.9 p.p.; Fadlon et al., 2026) and infertility (4 p.p.; Bögl et al., 2024), and somewhat smaller than that following rape (5 p.p.; Adams et al., 2026). These comparisons underscore the substantial long-run mental-health consequences of abortion denial.

[9] The attenuation of effects over time is consistent with evidence that individuals partially adapt to major adverse life events. Nevertheless, persistent increases in diagnoses, psychotropic medication use, and antipsychotic treatment three years after denial indicate substantial long-run scarring.

trists are rare: only 1.9% and 0.6% of women, respectively, receive these services in a given quarter. Immediately after filing, abortion denial increases the probability of consulting a psychiatrist by 16.4 p.p. and a psychologist by 3.2 p.p. The increase in psychologist consultations dissipates over time, whereas psychiatrist consultations remain significantly elevated twelve quarters after filing. Taken together, the increases in clinically verified diagnoses, psychotropic medication use, antipsychotic treatment, and specialty mental-health consultations indicate that abortion denial leads to substantially greater utilization of mental-health services and more intensive psychiatric treatment.

5.3 Physical and Reproductive Health

This section examines the effects of abortion denial on women's physical and reproductive health, focusing on infections and reproductive morbidity.

We begin by examining severe infections. Although a composite measure of infection diagnoses initially appears to decline during the filing quarter (Table V), this pattern is mechanical because pregnancies ending in abortion generate abortion-related and puerperal infection diagnoses that occur less frequently when abortions are denied. Once these abortion-related diagnoses are excluded, Figure V shows that abortion denial instead increases severe infection diagnoses that persist well beyond the filing quarter. Twelve quarters after filing, infection diagnoses remain 0.8 p.p. higher. The composition of infections also evolves over time. Initially, abortion denial primarily increases genitourinary and reproductive infections. One quarter later, the increase shifts toward septicemia and unspecified bacterial infections. By three years after filing, the remaining increase is again driven primarily by persistent genitourinary and reproductive infections. Similarly, redeemed systemic antibacterial medications rise by 9.4 p.p. in the filing quarter and remain 0.8 p.p. higher twelve quarters later.

The deterioration in women's reproductive health extends well beyond infections. We also observe persistent increases in diagnoses of reproductive morbidity, including abdominal and pelvic pain and menstrual or gynecologic conditions. Figure V shows that abortion denial increases these diagnoses by 1.2 p.p. in the filing quarter and 4.0 p.p. in the following quarter, with effects remaining statistically significant for at least two years. Consistent with these findings, women also exhibit sustained increases in redeemed analgesic prescriptions (Figure A.5). The increase is driven primarily by non-opioid analgesics and antipyretics, whereas opioid prescriptions remain largely unchanged.

Taken together, these findings indicate that abortion denial causes persistent deterioration in women's reproductive health, reflected not only in severe infections but also in

sustained increases in pain, gynecologic morbidity, and the use of analgesic medications.

5.4 Acute Health-Care Utilization and Mortality

Abortion denial also substantially increases acute health-care utilization. Beginning in the quarter after filing, Figure VI shows sharp and persistent increases in both ED visits and hospitalizations. Three years after filing, abortion denial increases the probability of an ED visit by 6.7 p.p. (62.6%) and the probability of hospitalization by 4.0 p.p. (71.4%). Although both outcomes exhibit a temporary decline during the filing quarter, this pattern largely reflects the reduction in recorded induced abortions, since many abortion procedures involve same-day ED visits or hospitalizations.

Supporting the interpretation that the filing-quarter decline is mechanical, excluding health-care encounters occurring on the day of the recorded abortion procedure eliminates the initial decline while leaving the long-run increases essentially unchanged. This result indicates that the persistent increases in ED visits and hospitalizations reflect genuine deterioration in health rather than abortion-related utilization. Excluding same-day abortion encounters also reveals a substantially higher cumulative burden of acute health-care utilization: abortion denial increases the probability of ever visiting the ED by 10.6 p.p. and ever being hospitalized by 17.4 p.p. within three years (Table VI).

What explains these persistent increases in acute health-care utilization? Figure VII decomposes ED visits and hospitalizations by ICD-10 chapter. These persistent increases are concentrated in infectious diseases, genitourinary conditions, and symptoms, signs, and pain. For ED visits, the largest increases occur in genitourinary conditions (1.4 p.p.), symptoms, signs, and pain (1.3 p.p.), and infectious diseases (0.6 p.p.). Hospitalizations show the same pattern, with increases concentrated in genitourinary conditions (1.0 p.p.), infectious diseases (0.7 p.p.), and symptoms, signs, and pain (0.3 p.p.).

Aside from the expected decline in pregnancy- and childbirth-related encounters, we find little evidence of persistent increases in acute care for most other major disease categories. Encounters related to mental health, circulatory diseases, respiratory diseases, injuries, and poisoning remain essentially unchanged three years after filing (Table A.9). Overall, the diagnostic composition of persistent ED visits and hospitalizations closely mirrors the earlier evidence on reproductive infections and reproductive morbidity. Together, these findings indicate that the long-run increase in acute health-care utilization is driven primarily by persistent reproductive and infectious conditions rather than broad deterioration across unrelated medical conditions.

Finally, we examine whether these persistent health consequences translate into in-

creased mortality. Table A.10 examines mortality within nine months of filing an abortion-related *tutela*. Abortion denial increases all-cause mortality by 0.5 percentage points (five additional deaths per 1,000 women), confirming the findings of Londoño-Vélez and Saravia (2025) in a substantially larger sample spanning four judicial districts. The increase is concentrated entirely in deaths from septicemia and other infections, while mortality from all other causes is essentially unchanged. This pattern closely mirrors the earlier evidence on infections and acute health-care utilization, suggesting that abortion denial can have severe physical-health consequences.

Overall, the evidence indicates that abortion denial causes substantial and persistent deterioration in women's physical and reproductive health. The deterioration spans the full spectrum of severity—from infections and reproductive morbidity to increased ED visits, hospitalizations, and ultimately mortality.

5.5 Robustness and Alternative Instruments.

Robustness. Figure A.6 compares the main estimated effects of abortion denial obtained using the UJIVE and the conventional leave-one-out judge-leniency estimator. Across all outcomes, the two approaches yield nearly identical estimates. This finding indicates that our results are not driven by the finite-sample bias that UJIVE is designed to correct and are robust to the choice of estimator.

Because 4.6% of women contribute observations from more than one pregnancy, we also assess whether allowing arbitrary within-woman correlation affects statistical inference. Figure A.7 compares the UJIVE estimates using heteroskedasticity-robust standard errors and standard errors clustered at the woman level. The estimated standard errors and confidence intervals are nearly identical, indicating that within-woman dependence has a negligible effect on inference.

Alternative Instruments. As discussed in Section 4, we exploit two distinct sources of quasi-random variation in abortion denial: judge stringency and judge sex. Because these instruments affect denial through different margins, they need not identify the same LATE. Consistent with this interpretation, Table A.7 shows that the corresponding complier populations differ. In particular, the judge-sex instrument primarily identifies a complier population concentrated in Medellín, consistent with the fact that the first-stage relationship between judge sex and abortion denial is strongest there (Table A.3), whereas the judge-stringency instrument identifies a broader complier population concentrated in Bogotá.

Across both instruments, abortion denial consistently increases mental-health diagnoses, psychotropic medication use, infections, ED visits, hospitalizations, and short-run mortality (Figure A.8; Table A.10). Both instruments also provide similar evidence of persistent deterioration in mental health. Estimates based on the judge-sex instrument are less precise, particularly for longer-run physical-health outcomes, reflecting the more limited identifying variation provided by the binary judge-sex instrument relative to the continuous judge-stringency measure. Because the two instruments identify different complier populations, some differences in estimated magnitudes are expected even under valid identification. Consistent with this interpretation, restricting the analysis to Medellín—where the judge-sex instrument is strongest and identifies a complier population more similar to that identified by judge stringency—produces nearly identical mortality estimates (Table A.11). This convergence is consistent with the full-sample differences reflecting heterogeneous treatment effects across complier populations.

Overall, the consistency of the estimated effects across two distinct instruments strengthens the evidence that abortion denial has substantial adverse effects on women's health.

6 Heterogeneity

The average effects estimated above may mask important heterogeneity in how women experience abortion denial. We first examine whether impacts vary by gestational age and prior mental-health history, before exploring heterogeneity by prior parity, prior contact with a PCP, and the legal grounds invoked in support of the abortion request.

6.1 Gestational Age

As gestational age advances, opportunities to terminate a pregnancy outside the formal healthcare system may become more limited and potentially more hazardous. Consequently, women denied abortions later in pregnancy may face both greater physical risks and greater emotional and practical costs than women denied earlier in pregnancy.

Although abortion denial reduces abortion access by similar amounts across gestational-age groups (Figure A.9), its downstream consequences are greater for women filing later in pregnancy. Panel (a) of Figure VIII and Table A.12 show that denial increases the probability of receiving a mental-health diagnosis by 37.2 p.p. among women filing after the first trimester, compared with 19.8 p.p. among women filing earlier—nearly twice the effect. Estimates for women whose gestational age cannot be inferred are broadly

similar to those for first-trimester filings, suggesting that the stronger effects documented here are specific to women denied abortions later in pregnancy rather than an artifact of missing gestational-age information. In contrast to both groups, women denied at more advanced gestational ages also experience larger increases in physical-health complications and health-care utilization. Twelve quarters after filing, they are significantly more likely to visit the ED and to be hospitalized, indicating persistent deterioration in physical health. Overall, these findings indicate that the health consequences of abortion denial increase substantially with gestational age.

6.2 Prior Mental-Health Diagnosis

Women with pre-existing mental-health conditions may be especially vulnerable to the mental-health consequences of abortion denial because additional stressors may exacerbate existing mental-health conditions and increase the likelihood of requiring treatment.

Panel (b) of Figure VIII examines heterogeneity by prior mental-health status, defined as having a documented mental-health diagnosis one to two years before filing. Although only 9% of women meet this criterion, the mental-health effects of abortion denial are larger for this group: diagnoses increase by 34.5 p.p. compared with 23.5 p.p. among women without a prior diagnosis, and the increase in medication use is more than twice as large. Importantly, because more than 90% of women seeking abortions through *tutelas* have no documented history of mental-health conditions, the latter group represents the vast majority of abortion seekers. Among these women, denial raises the probability of any mental-health diagnosis by 23.5 p.p., driven primarily by depression and anxiety, and increases psychotropic medications by 5.3 p.p., including a 4.2 p.p. rise in antipsychotic use. Although mental-health diagnoses and medication use remain elevated twelve quarters later in both groups, the differences between women with and without prior diagnoses narrow over time. Thus, abortion denial both exacerbates pre-existing mental-health conditions and generates substantial new mental-health problems among women with no documented prior mental-health conditions.

6.3 Other Dimensions

Prior Parity. Women with prior births may have greater parenting experience and familiarity with raising children, which could mitigate the psychological consequences of abortion denial. Conversely, an additional unintended birth may impose greater financial and caregiving burdens on women who already have children, leading to larger adverse effects. Using Vital Statistics birth records, we estimate that approximately 17.6% of women

had at least one prior birth before filing the abortion-related *tutela* (Table I).

Panel (c) of Figure VIII shows that abortion denial has substantially larger immediate effects on mental health among women with prior births. In the filing quarter, denial increases the probability of a mental-health diagnosis by 33.4 p.p. among women with prior births, compared with 23.7 p.p. among women without prior births. Likewise, denial increases the probability of redeeming psychotropic medications by 10.5 p.p. among women with prior births, compared with 5.6 p.p. among women without prior births. This heterogeneity is largely confined to the short run. Differences in longer-run mental-health diagnoses, psychotropic medication use, ED visits, and hospitalizations are smaller, and we cannot reject equal effects across groups. Women without prior births—the majority of *tutela* filers—also experience substantial adverse health effects. In particular, abortion denial significantly increases their long-run ED visits and hospitalizations, indicating that important health costs arise even among women who have not previously had children.

These findings are more consistent with the hypothesis that the additional financial and caregiving burdens associated with an unintended birth dominate any protective effects of prior parenting experience. Overall, abortion denial imposes substantial health costs regardless of prior parity, although the immediate mental-health consequences are more pronounced among women with prior births.

Prior Contact with a PCP. The effects of abortion denial on women's physical and mental health may vary depending on whether they have an established relationship with a PCP. Women with regular PCP contact may receive earlier diagnosis and treatment of mental-health conditions because they interact more frequently with the healthcare system. Conversely, women without regular PCP contact may have more limited access to routine care, potentially leading to greater reliance on emergency departments and inpatient care if health deteriorates following abortion denial.

To examine heterogeneity by prior PCP contact, we classify women as having regular PCP contact if they had at least one consultation with a PCP between two and one years before filing the abortion *tutela*. About 41.1% of the sample meets this criterion (Table I). Panel (d) of Figure VIII shows that abortion denial leads to larger immediate increases in mental-health diagnoses and redeemed psychotropic medications among women with prior PCP contact, consistent with greater detection and treatment of mental-health conditions among women already engaged with primary care. These differences dissipate over time. In contrast, women without prior PCP contact exhibit significantly larger long-run increases in ED visits, suggesting greater reliance on acute care following abortion denial.

Health Regime. The effects of abortion denial may differ depending on whether women are enrolled in Colombia's contributory or subsidized health regime. Women in the contributory regime are typically formally employed and therefore have, on average, higher socioeconomic status and better access to healthcare than women in the subsidized regime. These differences could either attenuate the consequences of abortion denial—through greater resources and access to care—or increase measured healthcare utilization by facilitating access to treatment.

Nearly two-thirds of women seeking abortion through *tutelas* are enrolled in the subsidized regime. Panel (a) of Figure A.10 shows that the estimated effects are broadly similar across the contributory and subsidized health regimes. This pattern suggests that the adverse health consequences of abortion denial are pervasive and are not limited to women in a particular socioeconomic group or segment of Colombia's health system. One exception is psychotropic medication use, which increases somewhat more among women in the contributory regime. This difference is consistent with better access to prescription medications among women covered by the contributory regime rather than larger underlying mental-health effects.

Legal Grounds Invoked in the Abortion *Tutela*. We also examine heterogeneity according to the legal grounds invoked in support of the abortion request. Unlike the preceding analyses, however, legal grounds are not predetermined characteristics and are observed for only about one-fourth of tutelas (Table A.1). Consequently, these estimates should be interpreted as descriptive rather than causal.

Panel (b) of Figure A.10 reports estimates separately for women citing risks to their physical health, risks to their mental or social health, severe fetal abnormalities, and rape or incest. Women invoking mental- or social-health grounds experience substantially larger immediate increases in mental-health diagnoses than the other groups. Beyond this pattern, estimates are generally imprecise—particularly for rape or incest—and provide little consistent evidence of systematic heterogeneity across legal grounds.

7 Mechanisms

The preceding sections document large and persistent deterioration in women's mental, physical, and reproductive health following abortion denial. We next examine why these health effects persist. Two broad explanations could account for the long-run consequences documented above. First, women denied an abortion may respond by changing their subsequent reproductive behavior through greater contraceptive use or reduced fer-

tility. Second, abortion denial may cause lasting deterioration in women's reproductive health. Before evaluating these competing explanations, we first examine how denied pregnancies are ultimately resolved because fewer than half of denied abortions result in recorded live births. Although this descriptive analysis does not itself explain the persistence of health effects, it provides useful context for interpreting the evidence that follows.

7.1 Pregnancy Resolution and Subsequent Health

Because fewer than half of denied abortions result in recorded live births, we first examine how health effects vary by subsequent pregnancy resolution. Although this analysis cannot identify mechanisms, it provides useful descriptive context for interpreting the evidence that follows.

Figure A.11 compares the effects of abortion denial among women whose pregnancies are ultimately carried to term and those whose pregnancies do not result in a recorded live birth. Both groups experience substantial adverse health consequences. However, the short-run increases in mental-health diagnoses, psychotropic medication use, and antibiotic use are larger among women whose pregnancies do not result in a recorded live birth. These women also experience larger increases in ED visits, although we cannot reject equality of effects across groups. The larger increase in psychotropic medication use among women whose pregnancies do not result in live births is also consistent with the possibility that concerns about fetal safety limit psychotropic medication use during pregnancy.

Because pregnancy resolution is itself affected by abortion denial, these comparisons should not be interpreted causally. Nevertheless, the findings suggest that how denied pregnancies are ultimately resolved may shape the resulting health consequences. In particular, the larger increases in mental-health diagnoses, psychotropic medication use, and antibiotic use among women whose pregnancies do not result in a recorded live birth are consistent with the possibility that some women denied abortions subsequently resolve their pregnancies outside the formal health system or through other pathways associated with elevated health risks.

7.2 Behavioral Adjustment versus Lasting Reproductive Deterioration

Behavioral Adjustment. If women respond to abortion denial by changing their subsequent reproductive behavior, we should observe sustained reductions in fertility accompanied by increased contraceptive use. Although abortion denial reduces the probability of subsequent pregnancy during the following three years by 4.4 p.p. (Table A.13), this de-

cline may reflect delayed childbearing or greater contraceptive use. We therefore examine subsequent contraceptive use.

Table VII shows that abortion denial temporarily *reduces* use of SARCs, LARCs, and permanent sterilization during the filing quarter, consistent with denied women remaining pregnant while women granted abortions often initiate contraception or sterilization shortly after the abortion procedure. These differences largely disappear over time (Figure A.12). Twelve quarters after filing, we find no statistically significant effect on SARC or LARC use, while the effect on sterilization is small and only marginally significant. Combined with the absence of long-run fertility effects, these results provide little evidence that persistent health consequences are explained by sustained behavioral adjustment.

Lasting Reproductive Deterioration. By contrast, the evidence is more consistent with lasting deterioration in women's reproductive health. Table A.13 shows that, despite no long-run reduction in fertility, abortion denial increases the probability of ectopic pregnancy, fetal death or stillbirth, serious obstetric complications, and high-risk pregnancy care. Together with the earlier evidence on persistent reproductive infections, these findings suggest that abortion denial has lasting adverse consequences for women's reproductive health rather than simply altering subsequent fertility behavior.

We next examine whether persistent reproductive-health consequences are concentrated among women who subsequently become pregnant. To align the timing of the subgroup definition and the outcomes, we measure reproductive morbidity between 10 and 36 months after filing and classify women according to whether they experience a subsequent pregnancy during the same period. If abortion denial has lasting effects on women's reproductive health, these consequences may be especially apparent among women who subsequently become pregnant.

Table A.14 shows that the increase in abdominal and pelvic pain is concentrated among women who subsequently become pregnant ($p < 0.001$). We also observe larger increases in genitourinary and reproductive infections among these women, although the differences across groups are not statistically significant. Although subsequent pregnancy during the 10- to 36-month follow-up period is itself affected by abortion denial and these comparisons should therefore not be interpreted causally, the concentration of reproductive-health harms among women with subsequent pregnancies complements the evidence above on ectopic pregnancy, fetal death or stillbirth, and severe pregnancy complications.

Taken together, the evidence provides little support for sustained behavioral adjustment as an explanation for the persistent health consequences of abortion denial. Instead,

the evidence consistently favors lasting deterioration in women's reproductive health. Abortion denial increases complications in subsequent pregnancies, while persistent reproductive morbidity is concentrated among women who later become pregnant. Although these analyses are necessarily descriptive because the outcomes are themselves affected by abortion denial, they are more consistent with lasting reproductive deterioration than with sustained changes in reproductive behavior.

8 Conclusions

This paper provides new causal evidence on the persistent mental, reproductive, and physical health consequences of abortion denial using nationwide longitudinal administrative health records and quasi-random variation in abortion denial. Across a broad range of clinically verified outcomes, abortion denial causes large and persistent deterioration in women's mental, reproductive, and physical health, spanning the full spectrum of severity—from mental-health conditions to severe reproductive complications, acute health-care utilization, and ultimately mortality. These effects remain clinically and economically meaningful years after abortion denial.

The health consequences are particularly severe among women denied later in pregnancy and among those with pre-existing mental-health conditions. Yet because over 86% of abortion seekers have no documented history of mental-health problems, most of the burden falls on women with no prior diagnoses, indicating that abortion denial generates substantial new mental-health problems rather than merely exacerbating pre-existing conditions.

Our analysis also sheds light on why these effects persist. Although abortion denial temporarily alters subsequent pregnancy patterns, we find little evidence that the long-run health consequences are explained by sustained changes in contraceptive use or fertility. Instead, our evidence points to lasting deterioration in women's reproductive health as an important mechanism underlying these persistent health consequences. This interpretation is supported by persistent reproductive infections, reproductive morbidity, and serious complications during subsequent pregnancies, all of which are consistent with enduring damage to women's reproductive health.

Our findings also complement our previous work on the broader consequences of abortion denial. In Londoño-Vélez and Saravia (2025), we show that abortion denial substantially increases single motherhood and produces persistent socioeconomic disadvantage, including lower household income, lower labor-force participation, lower educational attainment, and higher poverty. Together with the persistent reproductive health

consequences documented here, these lasting socioeconomic disruptions may help explain why the persistent mental-health effects remain detectable years after abortion denial, even among women with no documented history of mental illness.

These findings also help reconcile the apparent tension with prior evidence. While the U.S. Turnaway Study found no long-run differences in self-reported mental or physical health, our administrative data reveal large and persistent deterioration across a broad range of clinically verified outcomes, including diagnoses, emergency care, hospitalizations, and mortality. A likely explanation lies in differences in both measurement and statistical power. Diagnoses, redeemed medications, emergency care, hospitalizations, and mortality capture clinically verified outcomes that may not be fully reflected in self-reports, while our nationwide administrative data largely mitigates concerns about attrition, recall bias, and limited power to detect uncommon but clinically important health events. Together, these differences suggest that data limitations may help explain why earlier studies detected fewer persistent health consequences of abortion denial. Although the magnitude of these effects may vary across legal and healthcare settings—for example, because clandestine abortions and subsequent medical care differ in safety and accessibility—the clinically verified outcomes documented here highlight mechanisms through which abortion denial can generate persistent health harms.

Several limitations should be noted. First, some denied pregnancies appear to be resolved through channels that are not directly observed in the administrative data, making it difficult to distinguish between informal abortions, migration, and other mechanisms linking abortion denial to subsequent health outcomes. Second, although our data capture all recorded interactions with Colombia's formal health system, we do not observe untreated conditions or care obtained outside the formal healthcare system. Third, our measures depend on physicians' diagnostic and reporting practices and are therefore subject to diagnostic and reporting error. Fourth, our sample consists primarily of urban women, and the effects of abortion denial may differ in rural settings. Finally, because our analysis is based on women seeking abortions through Colombia's *tutela* system, caution is warranted when extrapolating the magnitudes of these effects to settings with different legal and health-care systems. While the institutional setting is distinctive, many of the barriers to accessing legal abortion—including provider refusal, administrative delays, and denial of legally protected care—have also been documented elsewhere. Moreover, the magnitude of these effects is likely to depend on the characteristics of women denied abortion. Our heterogeneity results identify gestational age at denial as one important source of this variation: the health consequences of abortion denial increase sharply with gestational age. Consequently, settings in which abortion denial occurs earlier in pregnancy

may exhibit smaller average effects than settings in which denial occurs later.

These results have important implications for policies governing abortion access. They provide little support for the view that restricting abortion access improves women's health. Instead, our findings indicate that abortion denial causes large and lasting deterioration in women's mental, physical, and reproductive health, particularly among women denied later in pregnancy. Our findings suggest that policies restricting abortion access can impose substantial and persistent harms to women's mental, reproductive, and physical health long after the pregnancy has ended.

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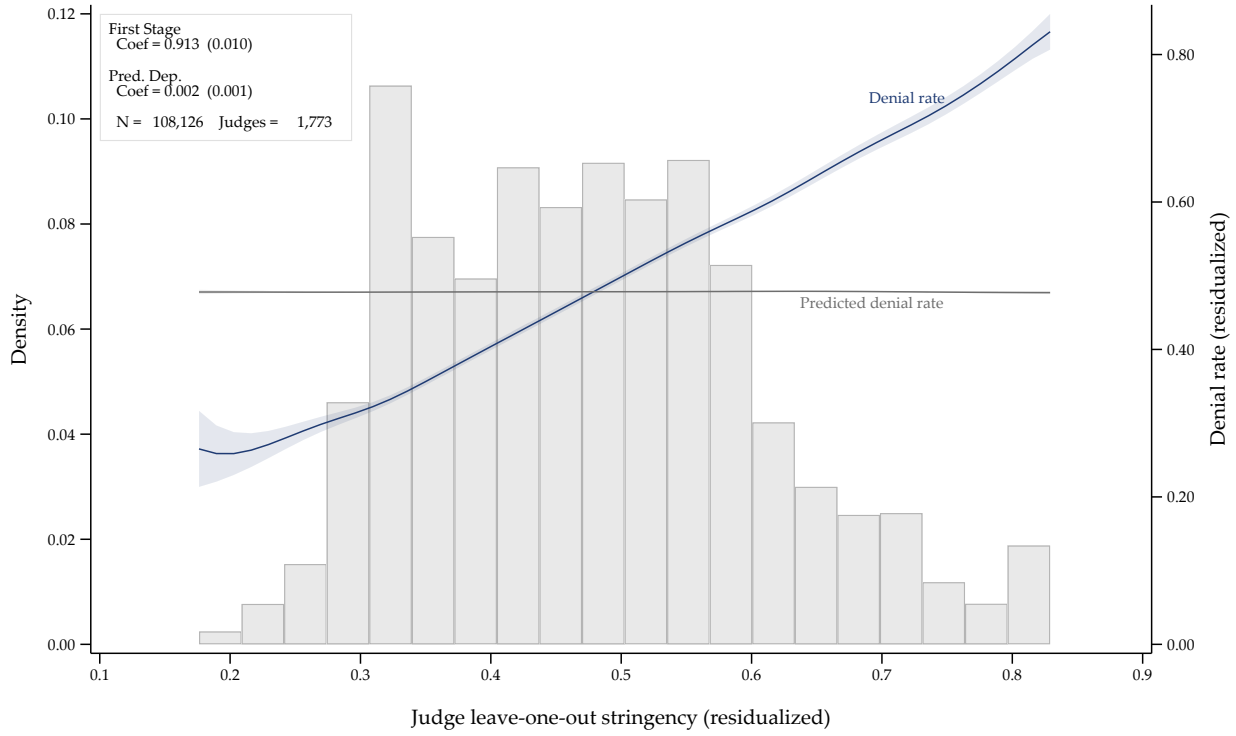
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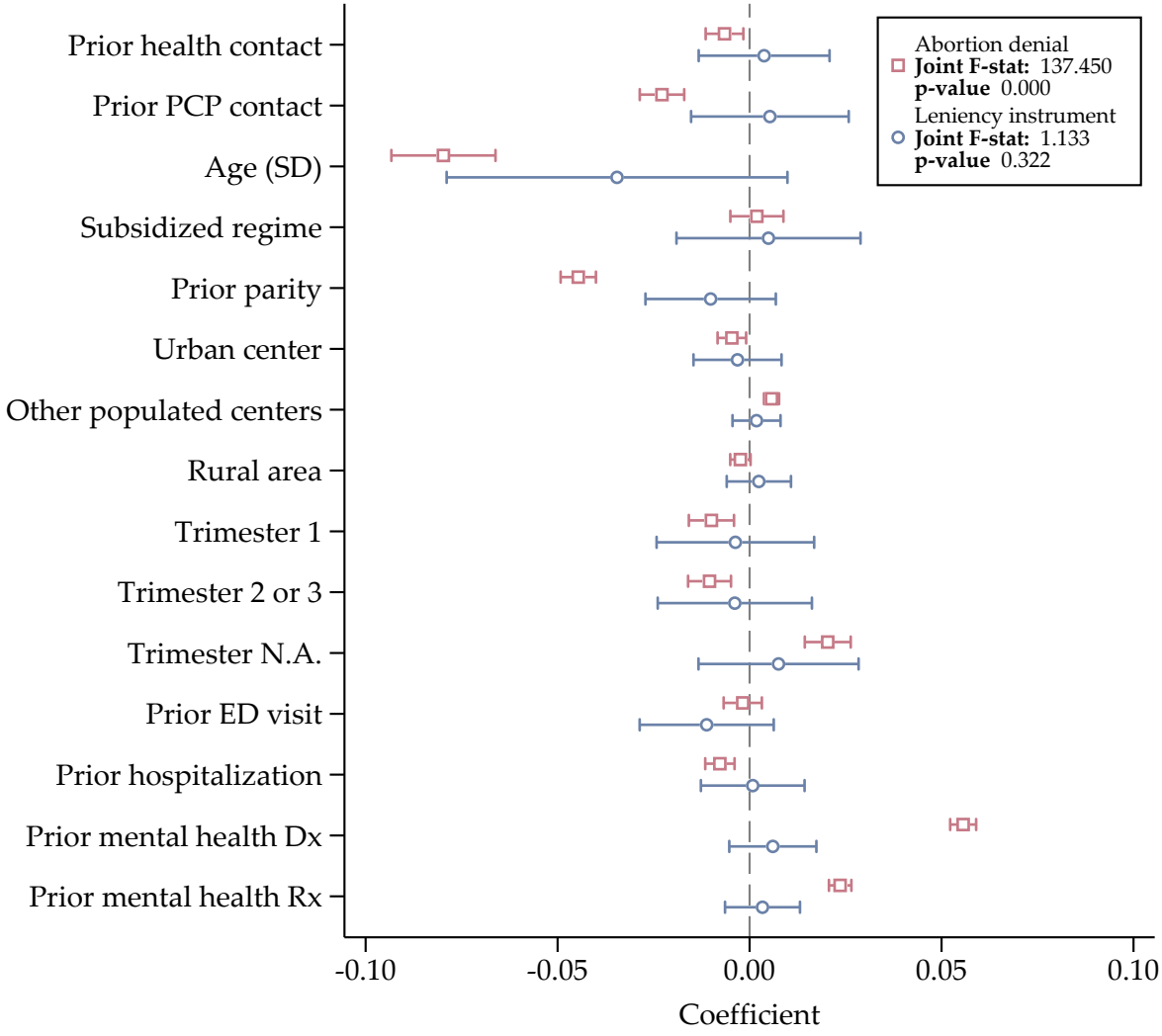
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Figure I: Judge Stringency



Notes: This figure illustrates the variation in our instrument (judge stringency), the first stage, and covariate balance. Both the outcome (abortion denial) and the instrument are residualized with respect to district-by-office-by-quarter fixed effects. The background histogram displays the distribution of the residualized instrument (recentered at the sample mean), trimming the bottom and top 0.5 percentiles for visualization (all observations are used in estimation). The upward-sloping curve plots a local linear regression of residualized abortion denial on residualized judge stringency, with 95% confidence intervals; the corresponding OLS first-stage coefficient (with judge-clustered standard errors) is reported in the top-left corner. The horizontal line plots a local linear regression of predicted abortion denial on the residualized instrument. Predicted denial is constructed using baseline fixed effects and individual covariates, including prior contact with the health system, prior PCP contact, age, subsidized regime, prior parity, area of residence, inferred gestational age, prior ED visits, prior hospitalizations, and prior mental-health diagnoses and medication use. The corresponding OLS coefficient and standard error are also reported in the top-left corner. *Sources:* Authors' calculations using data from the Constitutional Court and SISPRO.

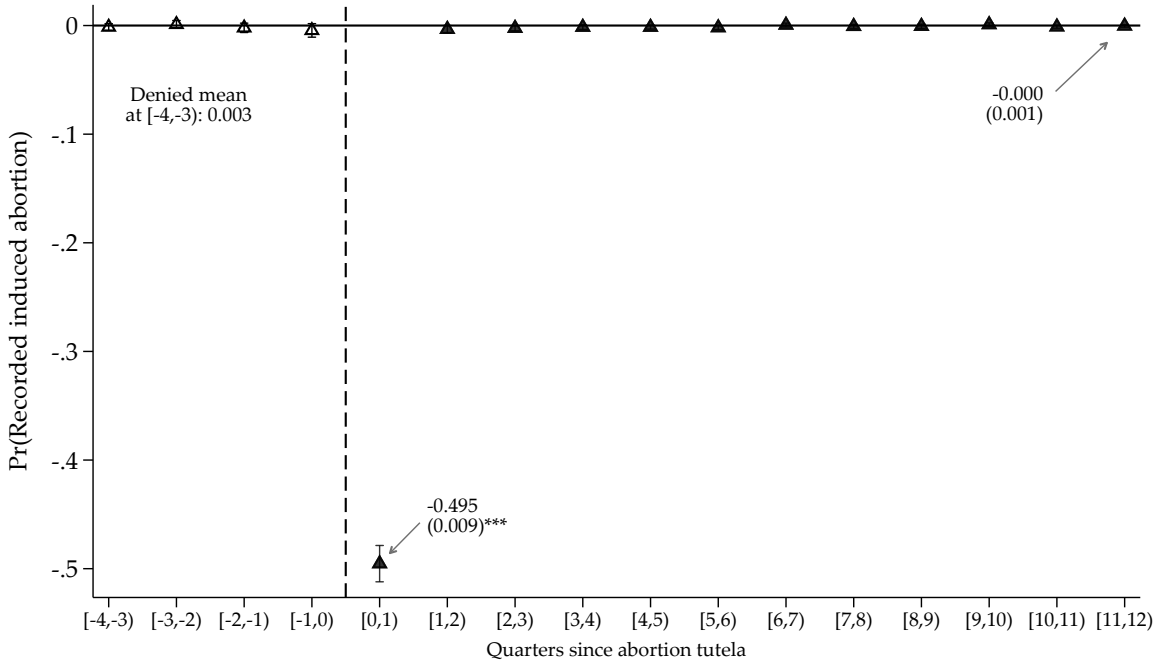
Figure II: Balance Test



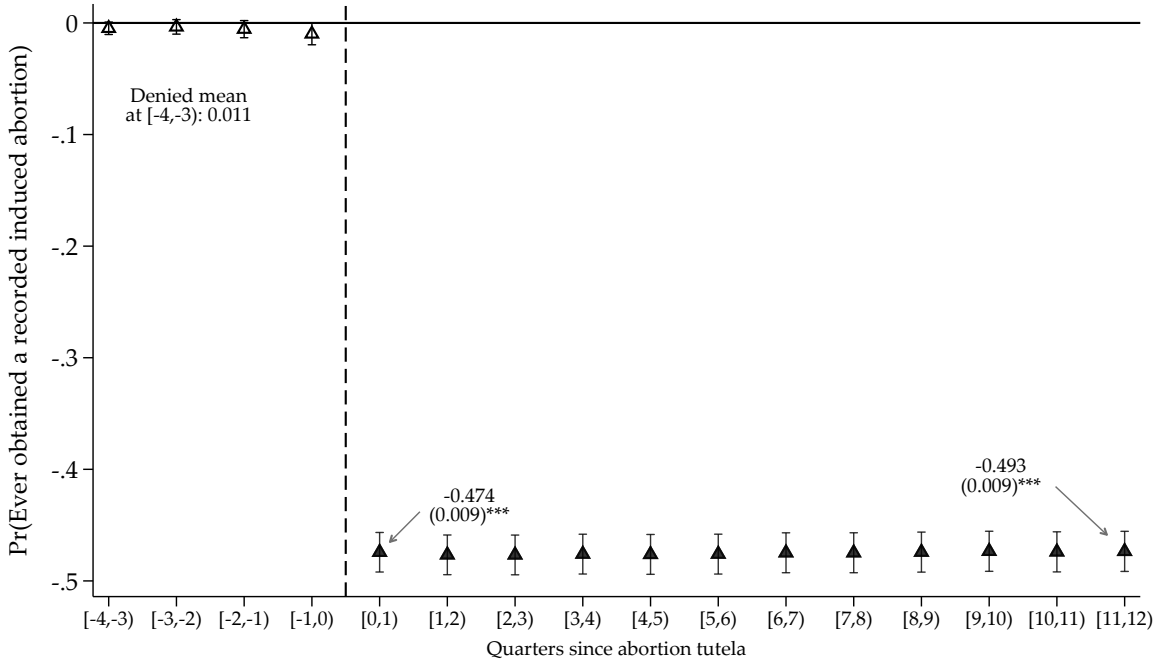
Notes: This figure presents balance tests supporting the exogeneity assumption of the IV approach. It plots OLS coefficient and 95% confidence intervals from regressions of abortion denial (red) and judge stringency (blue) on baseline individual characteristics, including district-by-office-by-time fixed effects. While individual characteristics predict abortion denial, they are uncorrelated with judge stringency, consistent with random assignment of cases to judges. *Sources:* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure III: The Impact of Abortion Denial on Recorded Induced Abortion

(a) Recorded Induced Abortion



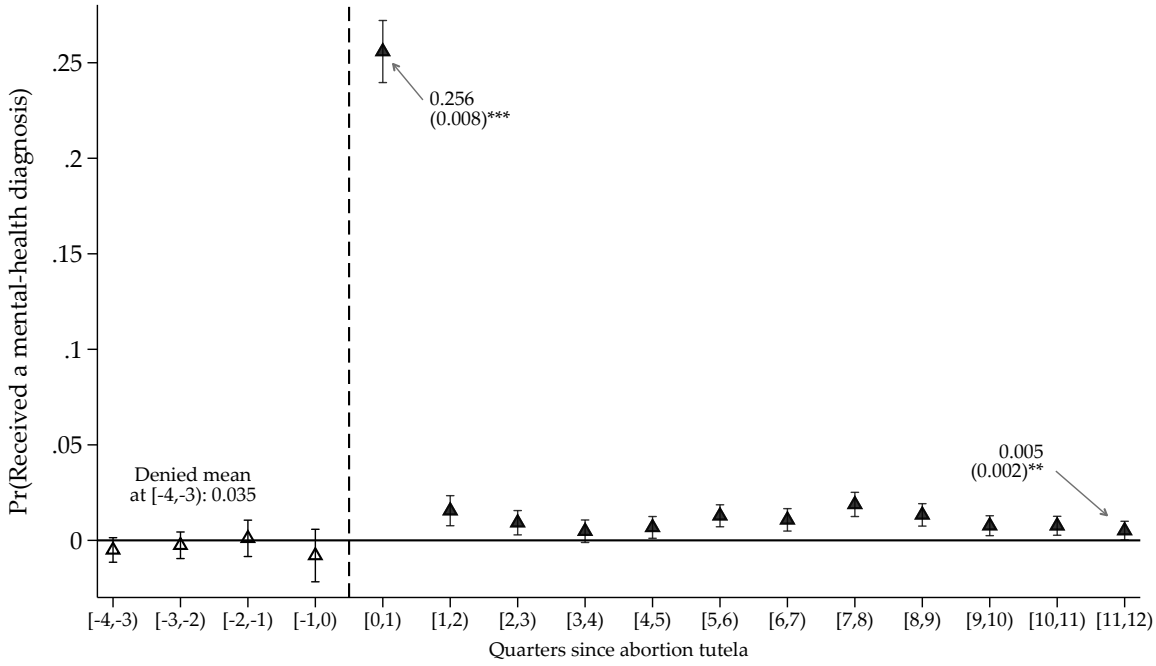
(b) Ever Obtained a Recorded Induced Abortion



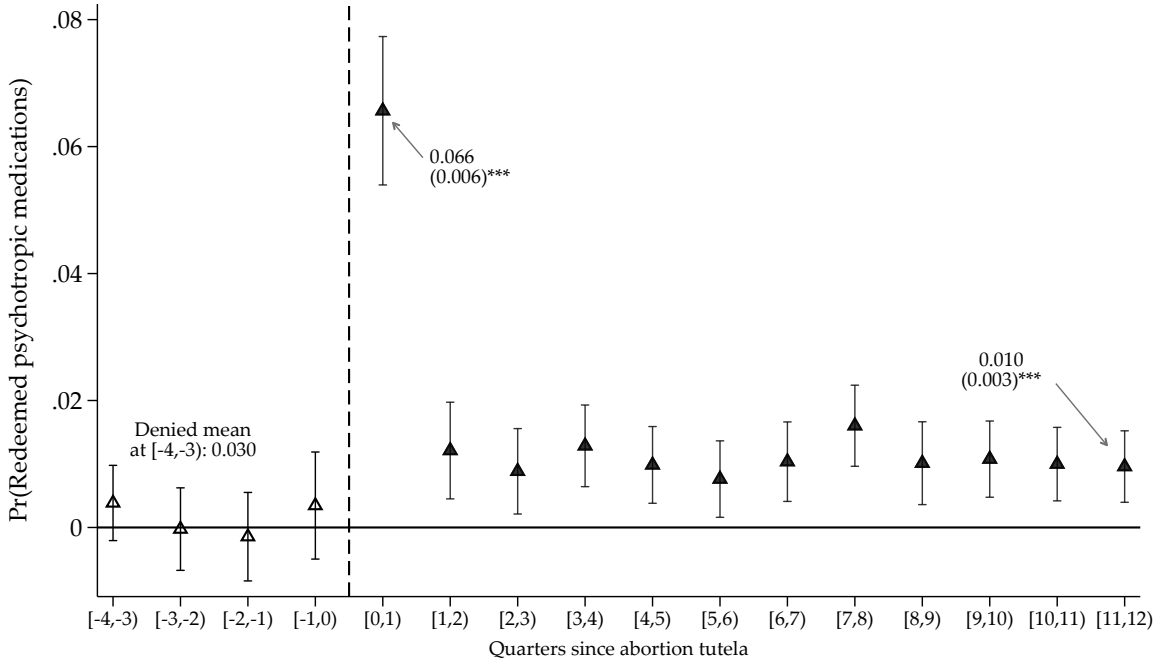
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panel (a) reports effects on the probability of obtaining a recorded induced abortion in each quarter relative to filing the abortion-related *tutela*. Panel (b) reports effects on the cumulative probability of ever obtaining a recorded induced abortion by the end of each quarter relative to filing. Estimates are shown from four quarters before filing to twelve quarters after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure IV: The Impact of Abortion Denial on Mental Health

(a) Received a Mental-Health Diagnosis



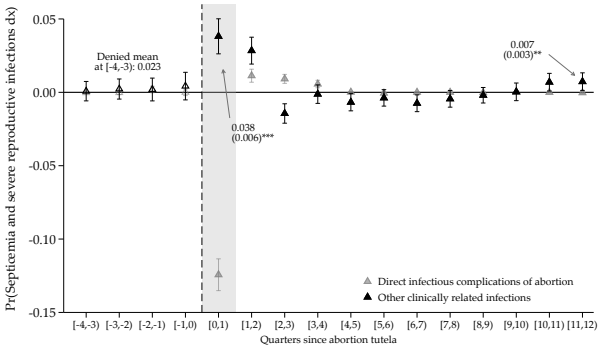
(b) Redeemed Psychotropic Medications



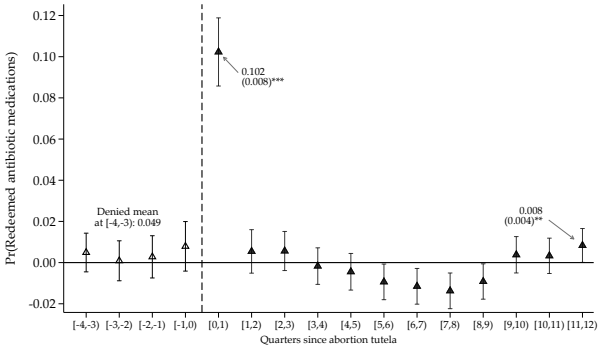
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panel (a) reports effects on the probability of receiving a mental-health diagnosis, and panel (b) reports effects on the probability of redeeming psychotropic medications, in each quarter relative to filing the abortion-related *tutela*. Estimates are shown from four quarters before filing to twelve quarters after filing.
Source. Authors' calculations using data from the Constitutional Court and SISPRO.

Figure V: The Impact of Abortion Denial on Physical and Reproductive Morbidity

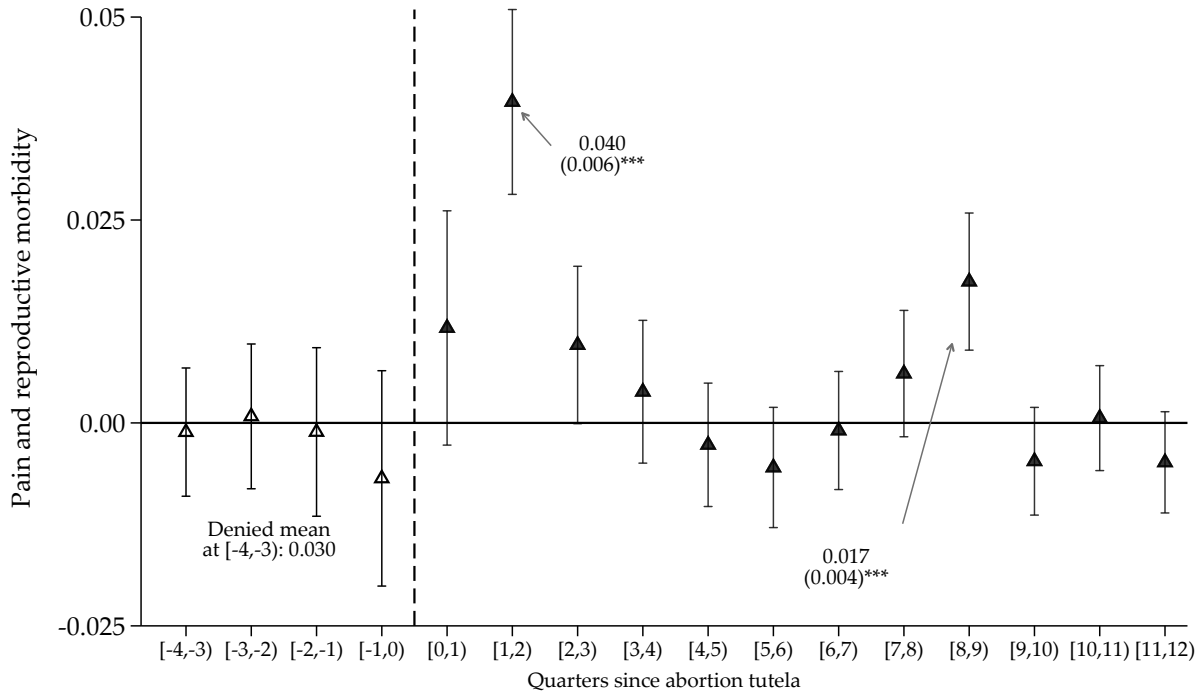
(a) Septicemia and Reproductive Infections Dx



(b) Redeemed Antibiotic Medications

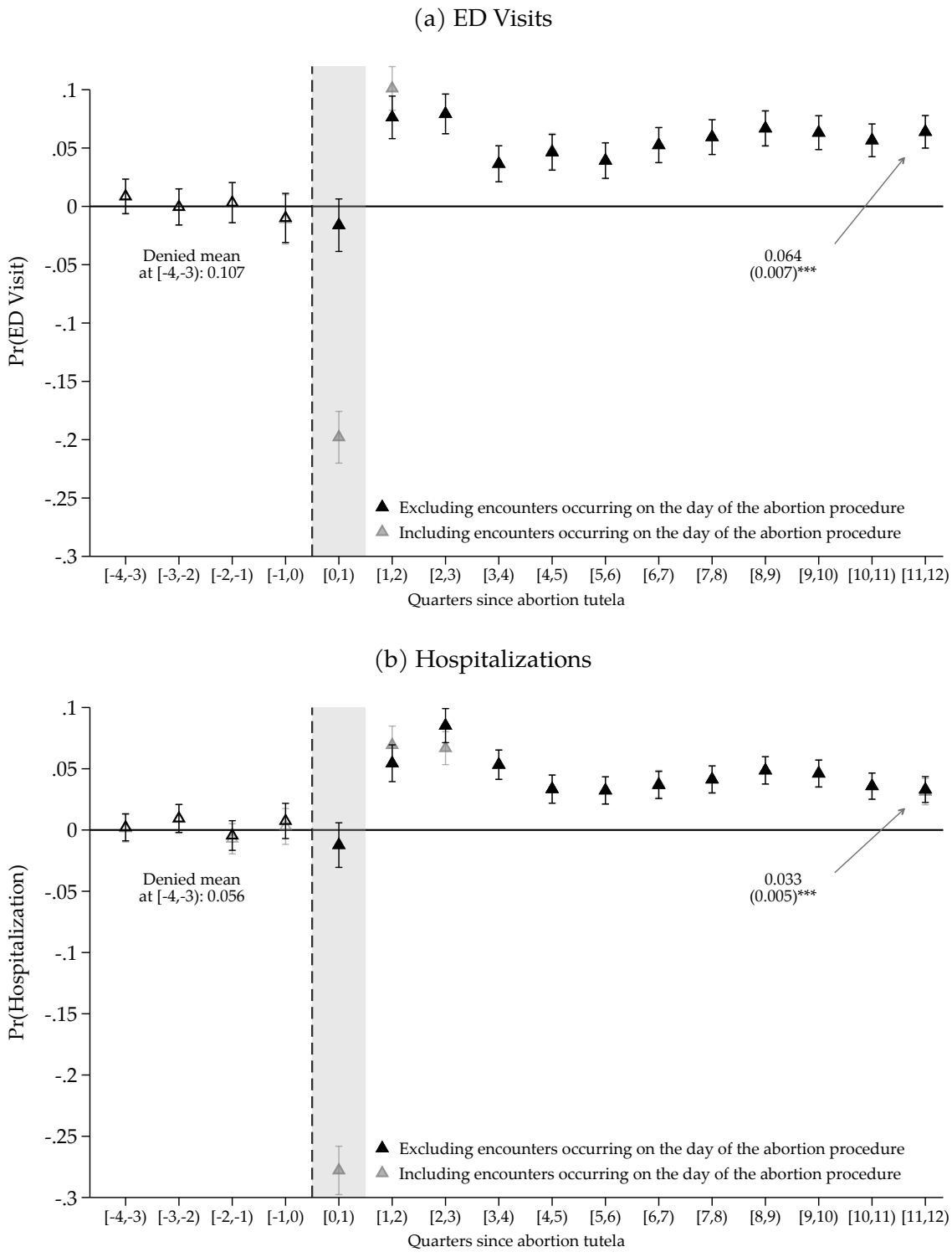


(c) Pain and Reproductive Morbidity Dx



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panel (a) reports effects on diagnoses of septicemia and reproductive infections, panel (b) reports effects on redeemed systemic antibiotic medications, and panel (c) reports effects on diagnoses of pain and other conditions involving the abdomen, female genital organs, or the menstrual cycle. Estimates are shown from four quarters before filing to twelve quarters after filing. In panel (a), the outcome is decomposed into diagnoses directly related to pregnancies with abortive outcomes and all other septicemia and reproductive infection diagnoses, as defined in Appendix B. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

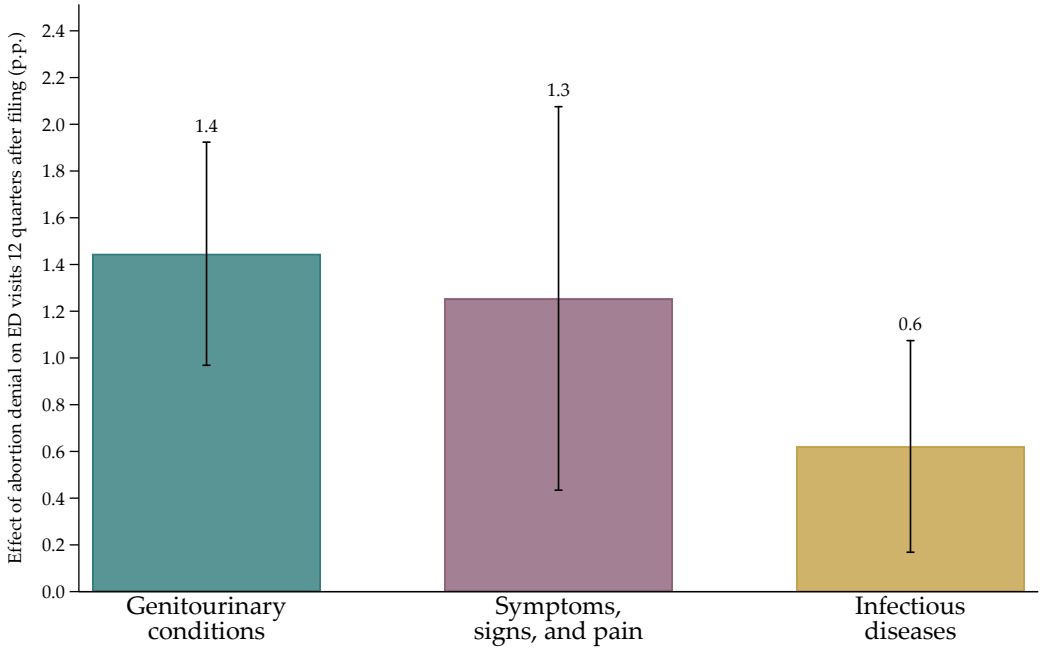
Figure VI: The Impact of Abortion Denial on ED Visits and Hospitalizations



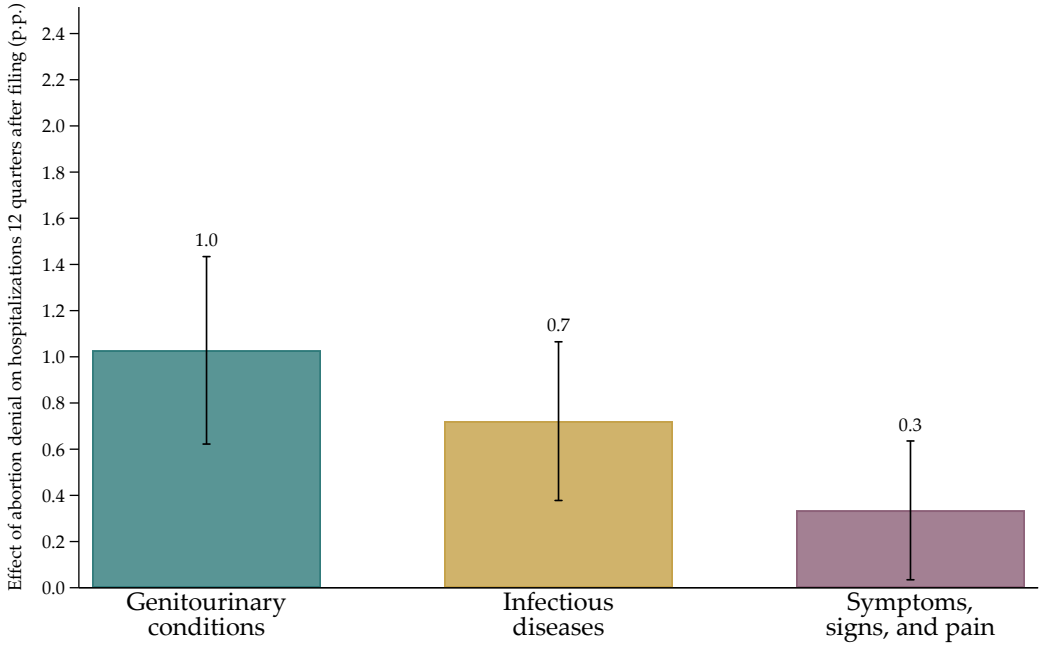
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panel (a) reports effects on the probability of an ED visit, and panel (b) reports effects on the probability of hospitalization, in each quarter relative to filing the abortion-related *tutela*. Estimates are shown from four quarters before filing to twelve quarters after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure VII: The Impact of Abortion Denial on Diagnoses Recorded during ED Visits and Hospitalizations, by ICD-10 Chapter

(a) Diagnoses Recorded during ED Visits

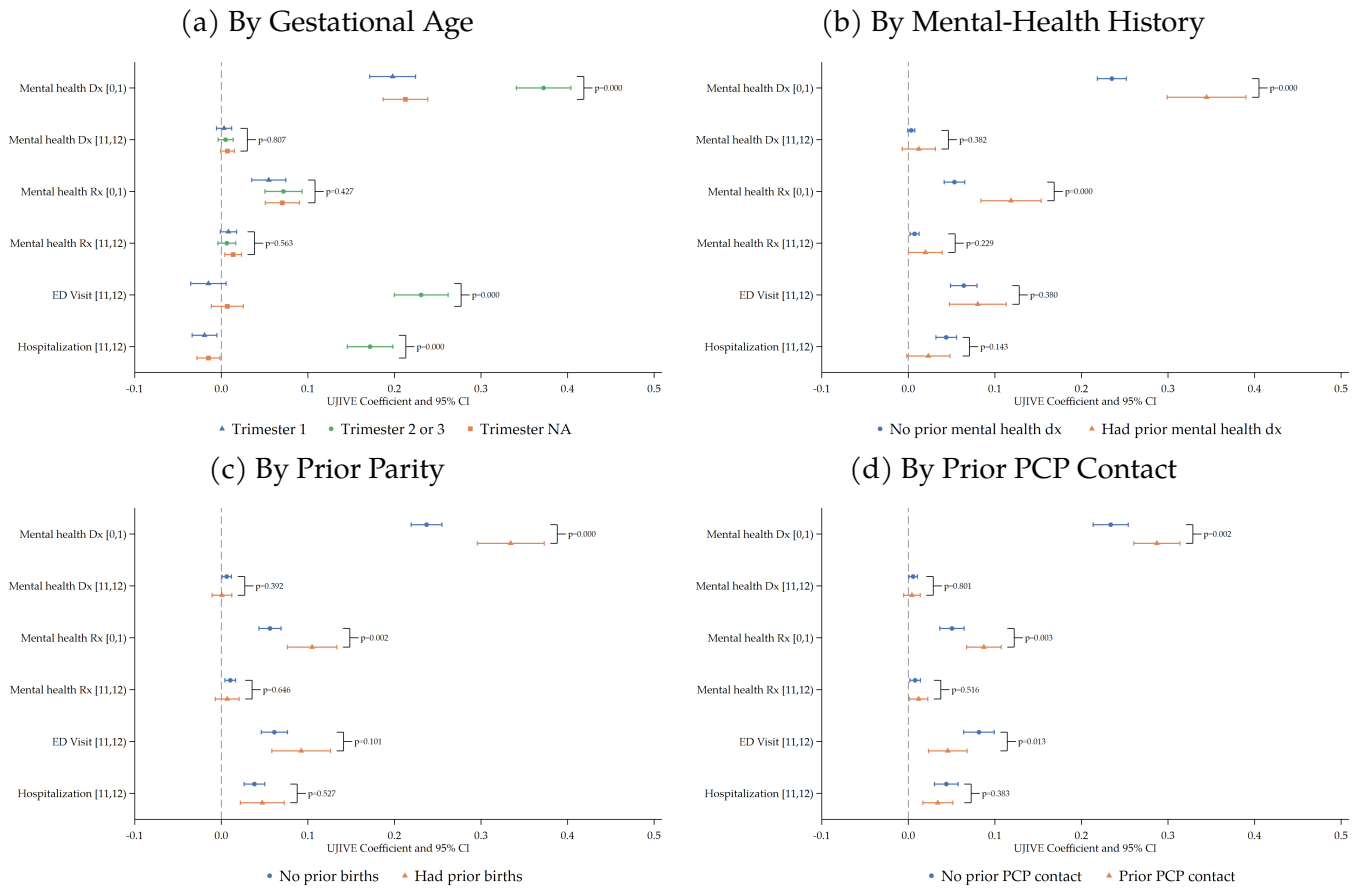


(b) Diagnoses Recorded during Hospitalizations



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panels (a) and (b) report effects on diagnoses recorded twelve quarters after filing, by ICD-10 chapter, during ED visits and hospitalizations, respectively. The figures graphically present the estimates reported in Table A.9. Because a single ED visit or hospitalization may include diagnoses from more than one ICD-10 chapter, the coefficients do not sum to the overall effect on ED visits or hospitalizations. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure VIII: Heterogeneity in the Impacts of Abortion Denial



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1), separately by gestational age (panel a), mental-health history (panel b), prior parity (panel c), and prior contact with a PCP (panel d). Estimates are reported for the filing quarter ([0,1)) and 11–12 quarters after filing ([11,12)). *P*-values for tests of equality across groups are reported. *Source.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Table I: Summary Statistics of Women Seeking Abortions

	Abortion-Related *Tutelas*				Recorded Induced Abortions			
	All (1)	Denied (2)	Not denied (3)	(2)–(3) *p*-value (4)	Without *tutela* (5)	With *tutela* (6)	(5)–(1) *p*-value (7)	(5)–(6) *p*-value (8)
Judicial district								
Medellín	0.259	0.307	0.215	0.000	0.263	0.172	0.035	0.000
Cali	0.115	0.134	0.097	0.000	0.160	0.095	0.000	0.000
Barranquilla	0.086	0.098	0.076	0.000	0.149	0.078	0.000	0.000
Bogotá	0.540	0.461	0.612	0.000	0.427	0.656	0.000	0.000
Prior contact with health system	0.802	0.797	0.806	0.000	0.883	0.838	0.000	0.000
Prior PCP contact	0.411	0.407	0.415	0.006	0.476	0.489	0.000	0.000
Age	24.802	24.945	24.695	0.000	28.525	26.235	0.000	0.000
Subsidized regime	0.638	0.642	0.635	0.043	0.554	0.619	0.000	0.000
Prior parity	0.176	0.148	0.202	0.000	0.168	0.270	0.000	0.000
Area of residence								
Urban center	0.928	0.917	0.937	0.000	0.982	0.955	0.000	0.000
Other populated centers	0.019	0.022	0.016	0.000	0.006	0.015	0.000	0.000
Rural area	0.034	0.037	0.033	0.000	0.012	0.030	0.000	0.000
Inferred gestational age								
Trimester 1	0.346	0.342	0.351	0.001	0.461	0.369	0.000	0.000
Trimester 2 or 3	0.286	0.277	0.296	0.000	0.185	0.297	0.000	0.000
Trimester N.A.	0.367	0.382	0.354	0.000	0.354	0.334	0.000	0.000
ED visit	0.210	0.211	0.209	0.378	0.236	0.235	0.000	0.853
Hospitalization	0.112	0.108	0.115	0.001	0.088	0.133	0.000	0.000
Mental health								
Diagnosis	0.090	0.124	0.059	0.000	0.023	0.055	0.000	0.000
Redeemed Rx	0.064	0.080	0.049	0.000	0.029	0.048	0.000	0.000
Observations	108,126	51,707	56,419		74,285	28,493		
Individuals	103,345	49,135	54,210		70,100	27,327		

Notes. This table reports baseline characteristics, health-care use, and morbidity. Age, insurance regime, area of residence, and gestational age are measured at filing an abortion *tutela* (Columns 1–4) or at abortion (Columns 5–7); all other variables are measured 1–2 years prior. Column (1) reports summary statistics for all abortion *tutelas*; Columns (2)–(3) split by denial, with Column (4) reporting *p*-values for equality of means. Columns (5)–(6) compare all women obtaining recorded induced abortions with and without filing a *tutela*; Columns (7)–(8) report *p*-values for equality tests. *Source.* Authors' calculations using data from the Constitutional Court, SISPRO and Vital Statistics.

Table II: Test of Random Case Assignment to Judges

	F-Statistic (1)	p-value (2)
Prior health contact	1.043	0.116
Prior PCP contact	1.031	0.194
Age	0.963	0.845
Subsidized regime	1.027	0.224
Prior parity	1.027	0.219
Area of residence		
Urban center	0.738	1.000
Other populated centers	0.781	1.000
Rural area	0.919	0.988
Inferred gestational age		
Trimester 1	0.920	0.989
Trimester 2 or 3	1.033	0.179
Trimester N.A.	0.977	0.739
ED visit	1.031	0.194
Hospitalization	0.961	0.865
Mental health		
Diagnosis	0.978	0.731
Redeemed Rx	0.922	0.988
Joint F-test	0.873	
p-value	0.589	

Notes: This table reports tests of random case assignment to judges. Each row displays the coefficient from running an OLS regression of each baseline control variable on the judge fixed effect and the district-by-office-by-time fixed effect. The p-value reported at the bottom is for an F-test of the joint significance of the variables listed in the rows. *Sources:* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Table III: The Impact of Abortion Denial on Pregnancy Outcomes

	Recorded Induced Abortions					
	Any method	Medication or vacuum aspiration	D&C or other	Childbearing	Fetal death	Residual
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. *Within nine months of filing*						
	-0.498	-0.037	-0.470	0.214	0.003	0.280
	(0.009)***	(0.003)***	(0.009)***	(0.010)***	(0.002)	(0.011)***
μ^{ND}	0.485	0.042	0.456	0.164	0.012	0.348
Panel B. *Within three years from filing*						
	-0.493	-0.038	-0.466			
	(0.009)***	(0.003)***	(0.009)***			
μ^{ND}	0.487	0.043	0.459			

Notes. This table reports UJIVE coefficient estimates and robust standard errors from specification (1) of the effects of abortion denial on the probability of obtaining a recorded induced abortion (columns 1–3), a recorded live birth (column 4), fetal death or stillbirth (column 5), or falling into the residual pregnancy-outcome category (column 6). Column (1) reports effects on any recorded induced abortion. Columns (2) and (3) decompose recorded induced abortions by method: medication or vacuum aspiration versus D&C or other procedures. Panel (a) reports effects on pregnancy outcomes within nine months of filing the abortion-related *tutela*. Panel (b) reports effects on the cumulative probability of ever obtaining a recorded induced abortion within three years of filing. The residual pregnancy-outcome category includes pregnancies not observed in the administrative data as recorded induced abortions, recorded live births, or fetal deaths. The final row reports the corresponding mean among non-denied women. *Source.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Table IV: The Impact of Abortion Denial on Mental Health

	Mental-Health Diagnosis						Mental-Health Rx	
	Any	Depression	Anxiety	Postpartum	PTSD	Other	Any	Antipsychotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. *In the filing quarter*								
	0.256	0.144	0.154	-0.000	0.003	-0.003	0.066	0.042
	(0.008)***	(0.007)***	(0.006)***	(0.000)	(0.002)*	(0.002)*	(0.006)***	(0.004)***
Panel B. *Twelve quarters after filing*								
	0.005	0.002	0.005	0.000	0.000	-0.000	0.010	0.006
	(0.002)**	(0.002)	(0.002)**	(0.000)	(0.000)	(0.000)	(0.003)***	(0.002)***
$\mu^{D}_{[-4,-3)}$	0.035	0.018	0.015	0.000	0.001	0.001	0.030	0.006

Notes. This table reports the estimated effects of abortion denial on mental-health outcomes using specification (1). Columns (1)–(6) report ICD-10 mental-health diagnoses. Columns (7)–(8) report redeemed psychotropic medications classified using the ATC-coded system (N05–N06), with Column (8) restricted to antipsychotics (N05A, excluding lithium [N05AN]). Panel (a) reports effects in the *tutela* filing quarter, and Panel (b) reports effects three years after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table V: The Impact of Abortion Denial on Physical and Reproductive Morbidity

	Infections							Reproductive morbidity	
			Diagnoses				*Medications*	*Diagnoses*	
	Composite index	Abortion-related	Genitourinary and reproductive	Sepsis and septic shock	Puerperal	Unspecified bacterial	Systemic antibacterials	Abdominal and pelvic pain	Gynecologic disorders
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A. *In the filing quarter*									
	-0.088	-0.127	0.050	-0.006	-0.007	0.000	0.094	0.013	-0.003
	(0.008)***	(0.006)***	(0.006)***	(0.001)***	(0.002)***	(0.001)	(0.008)***	(0.007)*	(0.001)**
Panel B. *One quarter after filing*									
	0.042	0.011	-0.004	0.016	0.001	0.017	0.005	0.035	0.004
	(0.005)***	(0.002)***	(0.004)	(0.002)***	(0.001)	(0.002)***	(0.005)	(0.006)***	(0.002)**
Panel C. *Twelve quarters after filing*									
	0.007	-0.000	0.007	0.000	0.000	-0.000	0.008	-0.005	0.001
	(0.003)**	(0.000)	(0.003)**	(0.000)*	(0.000)	(0.000)	(0.004)**	(0.003)*	(0.001)
$\mu^{D}_{[-4,-3)}$	0.023	0.000	0.020	0.000	0.000	0.000	0.049	0.031	0.003

Notes. This table reports the effects of abortion denial on several physical health outcomes, measured in the quarter of filing (Panel a), one quarter after filing (Panel b), and twelve quarters after filing (Panel c), using specification (1). Columns (2)–(6) decompose the composite infection index reported in column (1) into abortion-related infections (ICD-10 O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O06.0, O06.5, O07.0, O07.5, O08.0), genitourinary and reproductive infections (N39.0, N70–N73), sepsis and septic shock (A40, A41, A48.0, R57.2), puerperal infections (O85–O86), and unspecified bacterial infections (A49.8, A49.9). Column (7) reports redeemed systemic antibacterial medications (ATC J01). Columns (8)–(9) report reproductive morbidity, measured using abdominal and pelvic pain (R10.2–R10.4) and gynecologic disorders (N94). *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table VI: The Effects of Abortion Denial on ED Visits and Hospitalizations

	ED Visit	Hospitalization
	(1)	(2)
Panel A. *Including encounters occurring on the day of the abortion procedure*		
Filing quarter	-0.203	-0.278
	(0.011)***	(0.010)***
Twelve quarters later	0.067	0.040
	(0.007)***	(0.005)***
Ever within three years	0.013	-0.022
	(0.010)	(0.011)*
Panel B. *Excluding encounters occurring on the day of the abortion procedure*		
Filing quarter	-0.016	-0.012
	(0.011)	(0.009)
Twelve quarters later	0.067	0.039
	(0.007)***	(0.005)***
Ever within three years	0.106	0.174
	(0.011)***	(0.012)***
$\mu^{D}_{[-4,-3)}$	0.107	0.056

Notes. This table reports the effects of abortion denial on ED visits and hospitalizations, estimated using specification (1). Panel (a) includes health-care encounters occurring on the day of the recorded abortion procedure, while Panel (b) excludes these encounters. Each panel reports effects on the probability of at least one ED visit or hospitalization during the filing quarter, on having at least one ED visit or hospitalization during quarters 11–12 after filing, and on the cumulative probability of ever experiencing an ED visit or hospitalization within three years. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table VII: The Impact of Abortion Denial on Subsequent Contraceptive Behavior

	Redeemed Rx for SARCs (1)	Active LARC (2)	Has ever undergone sterilization (3)
Panel A. *In the filing quarter*			
	-0.041	-0.016	-0.016
	(0.006)***	(0.005)***	(0.003)***
Panel B. *Twelve quarters after filing*			
	-0.000	-0.005	-0.009
	(0.003)	(0.007)	(0.006)*
$\mu^D_{[-4,-3)}$	0.026	0.010	0.005

Notes. This table reports the effects of abortion denial on subsequent contraceptive behavior, estimated using specification (1). Column (1) reports effects on redeemed SARC medications. Column (2) reports effects on active LARC use. Column (3) reports effects on the probability of ever undergoing sterilization. Panel (a) presents effects in the quarter of *tutela* filing, and Panel (b) reports effects twelve quarters later.
Source. Authors' calculations using data from the Constitutional Court and SISPRO.

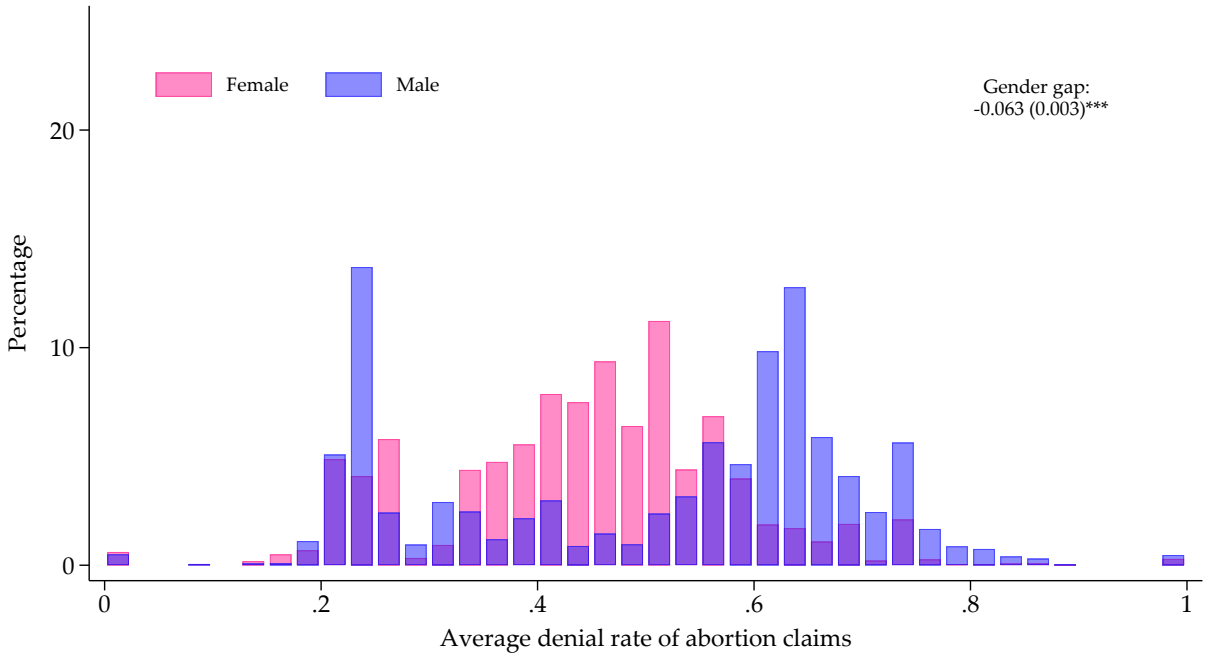
Online Appendix

The Consequences of Abortion Denial on Women's Physical and Mental Health

Juliana Londoño-Vélez and Estefanía Saravia

A Appendix Figures and Tables

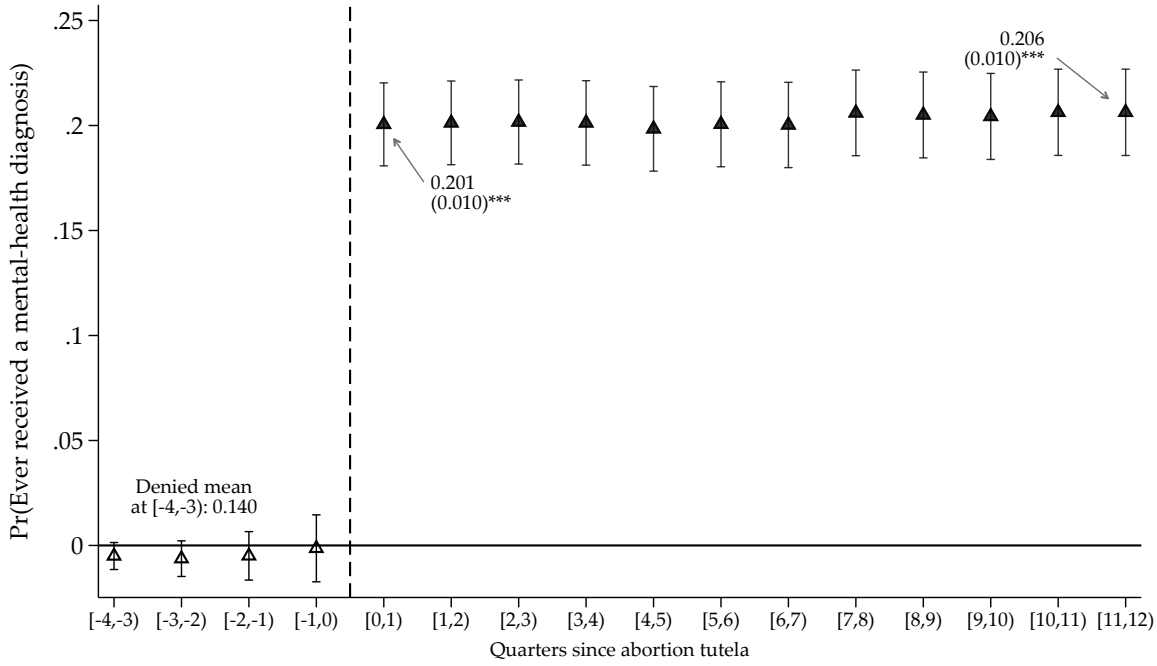
Figure A.1: Female Judges are Less Likely than Male Judges to Reject Abortion *Tutelas*



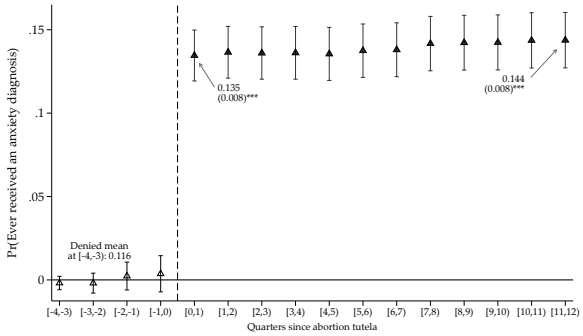
Notes: This figure plots the distribution of the judge-specific likelihood of denying an abortion-related *tutela* separately for male and female judges, where each judge is weighted by the number of abortion rights *tutelas* handled. 108,126 abortion rights *tutelas* are handled by a total of 1,773 judges, 48.2% of whom are female. Female judges are 6.3 p.p. less likely to deny women a wanted abortion than male judges (Table A.3). *Sources:* Authors' calculations using data from the Constitutional Court.

Figure A.2: The Impact of Abortion Denial on Ever Receiving a Mental-Health Diagnosis

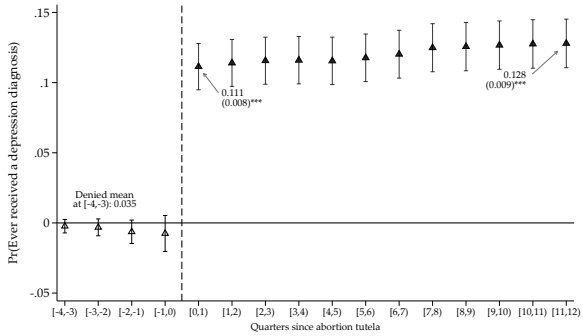
(a) Ever Received Any Mental-Health Diagnosis



(b) Ever Received an Anxiety Diagnosis



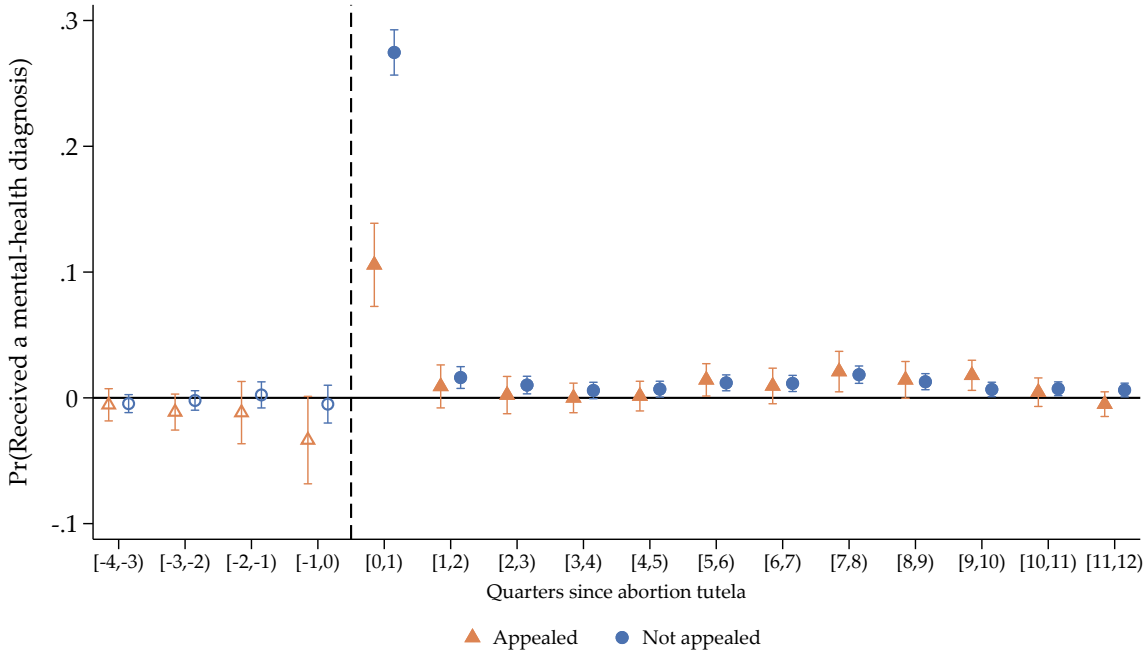
(c) Ever Received a Depression Diagnosis



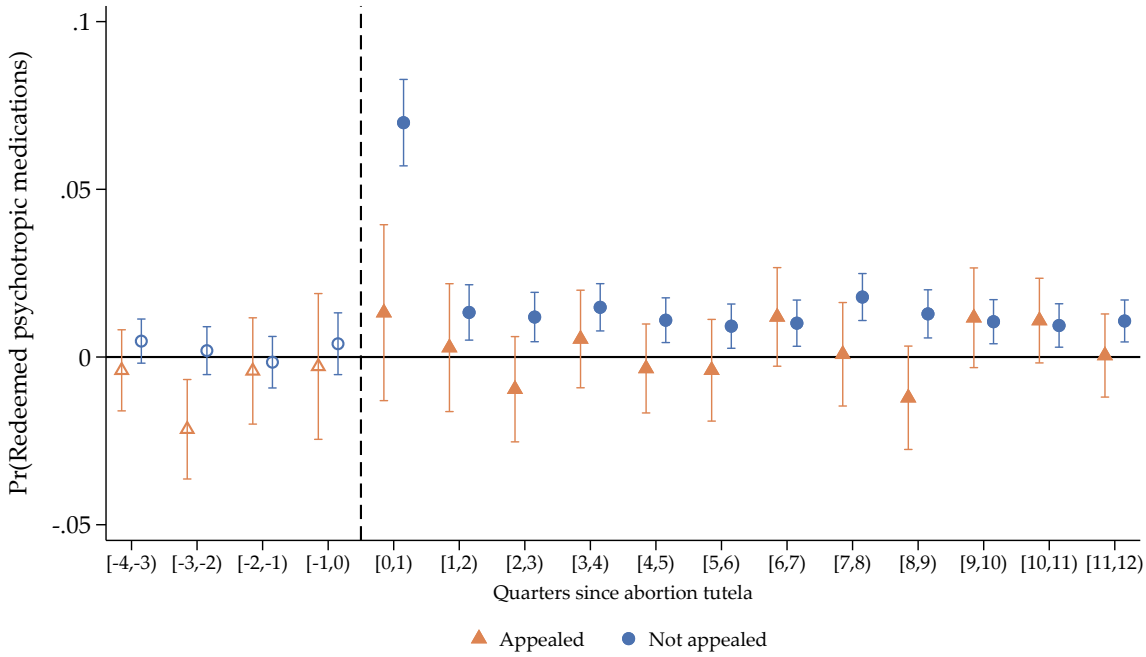
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panels report effects on the cumulative probability of ever receiving the indicated mental-health diagnosis by the end of each quarter relative to filing the abortion-related *tutela*. Estimates are shown from four quarters before filing to twelve quarters after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure A.3: The Impact of Abortion Denial on Mental Health by Appeal Status

(a) Received a Mental-Health Diagnosis



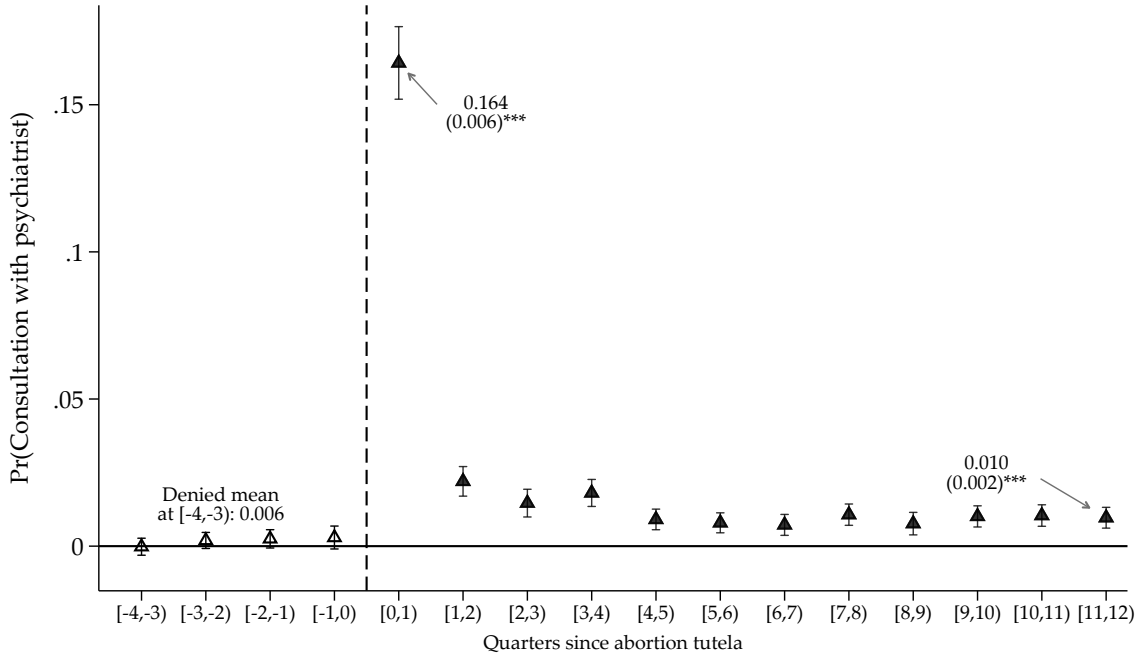
(b) Redeemed Psychotropic Medications



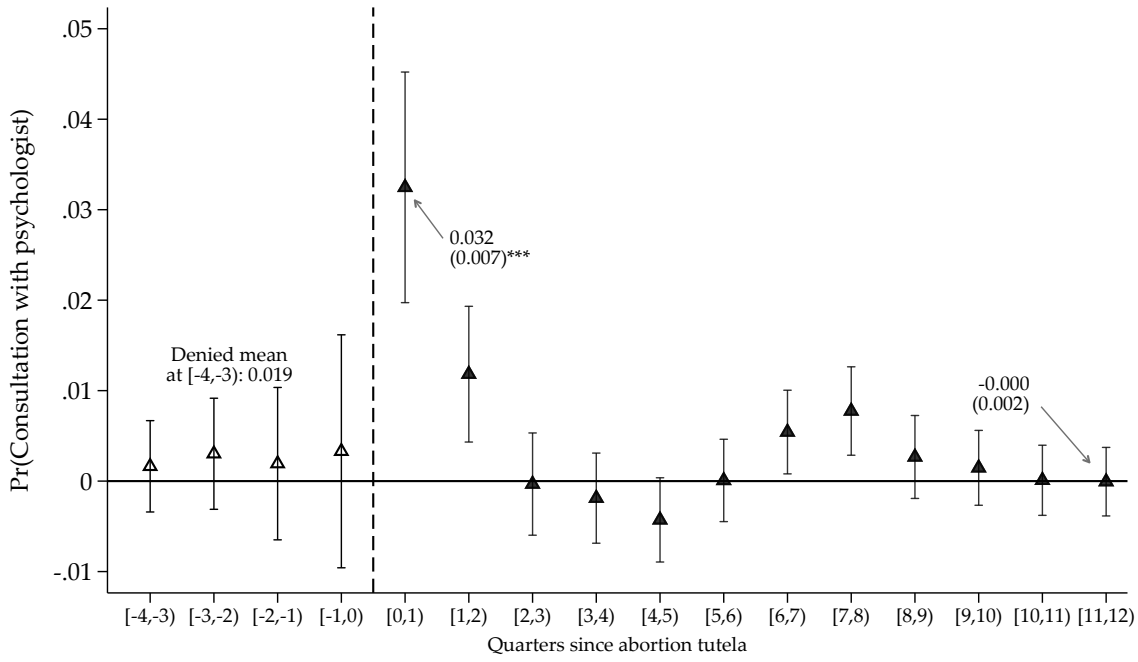
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1) by appeal status. Estimates are reported separately for women who appealed the initial *tutela* ruling (14.9% of the sample) and for those who did not. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure A.4: The Impact of Abortion Denial on Mental-Health Consultations

(a) Consultations with a Psychiatrist

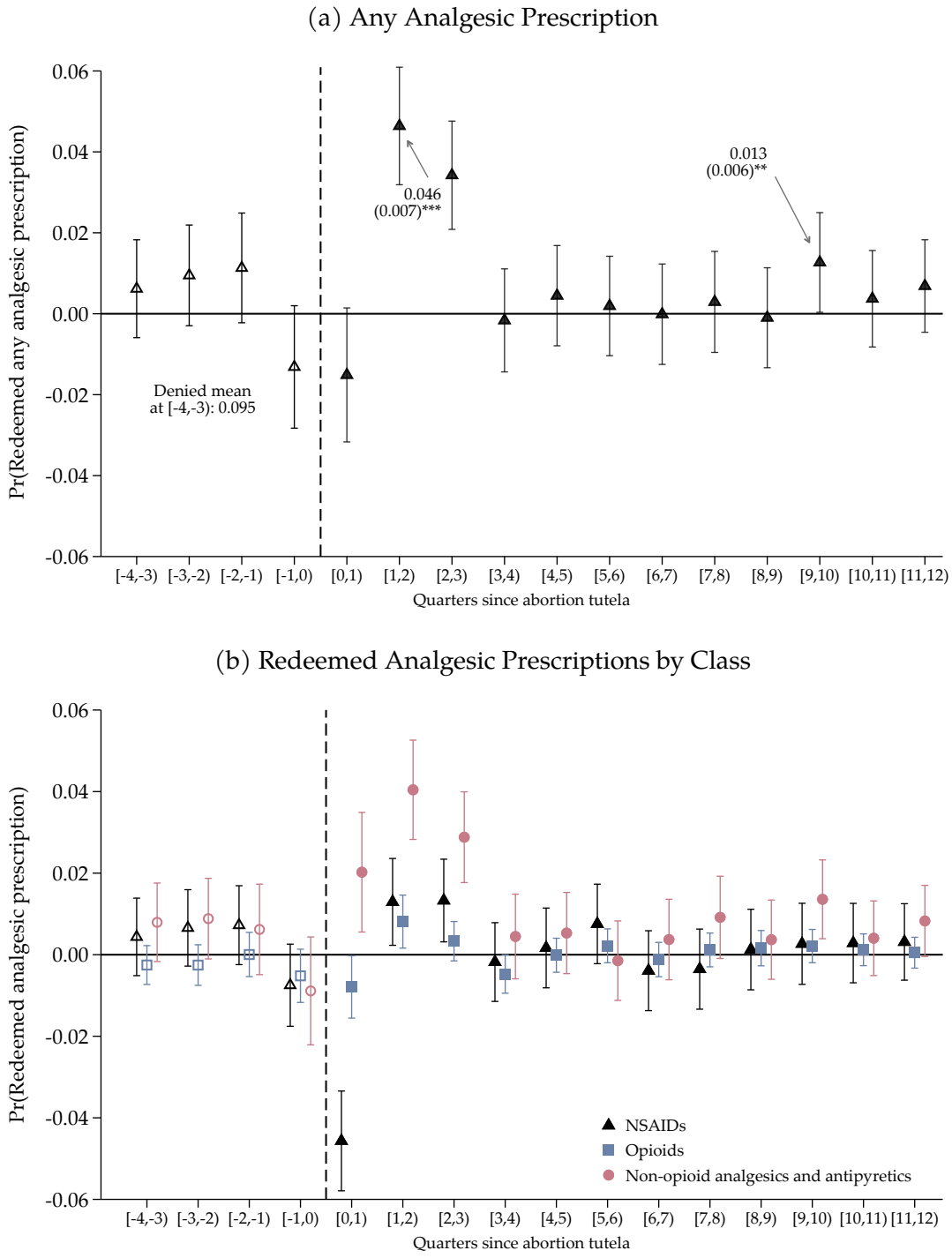


(b) Consultations with a Psychologist



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panel (a) reports effects on the probability of at least one consultation with a psychiatrist, and panel (b) reports effects on the probability of at least one consultation with a psychologist, in each quarter relative to filing the abortion-related *tutela*. Estimates are shown from four quarters before filing to twelve quarters after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

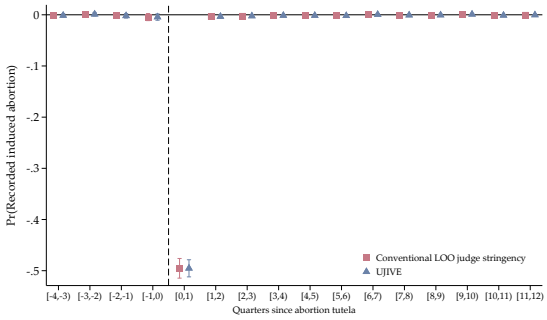
Figure A.5: The Impact of Abortion Denial on Redeemed Analgesic Prescriptions



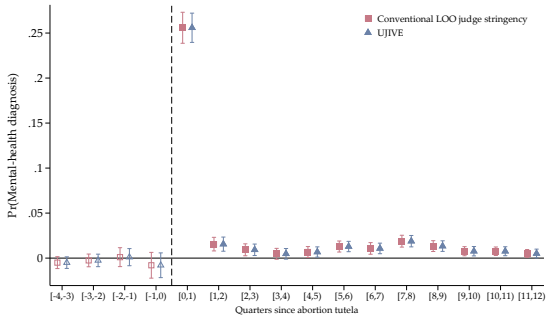
Notes. This figure plos UJIVE coefficient estimates with 95% confidence intervals from specification (1) for the probability of redeeming analgesic prescriptions. Panel (a) reports the probability of redeeming any analgesic prescription across three analgesic classes. Panel (b) reports estimates separately for nonsteroidal anti-inflammatory drugs (NSAIDs; ATC M01A), opioids (ATC N02A), and non-opioid analgesics and antipyretics (ATC N02B). The decline in NSAID prescriptions during the filing quarter reflects the reduction in abortion procedures, which are commonly accompanied by peri-procedural NSAID prescriptions. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure A.6: Comparing UJIVE and Conventional Leave-One-Out IV Estimates

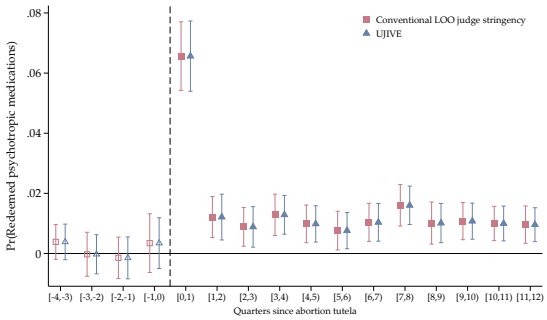
(a) Recorded Induced Abortion



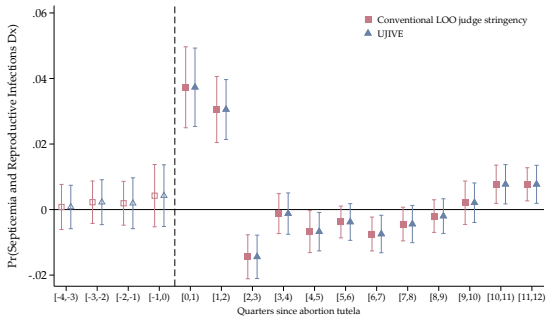
(b) Mental-Health Diagnosis



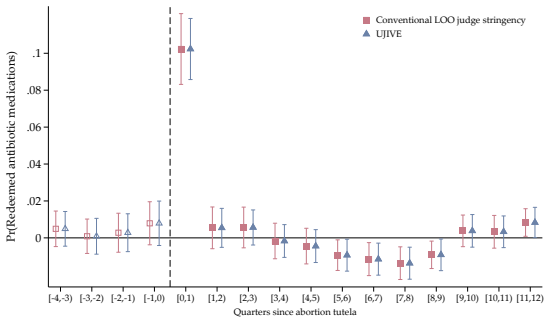
(c) Redeemed Psychotropic Rx



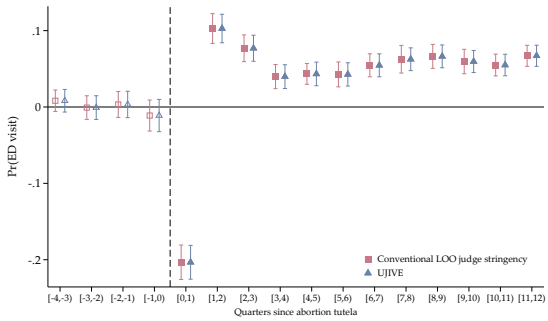
(d) Septicemia and Infections Dx



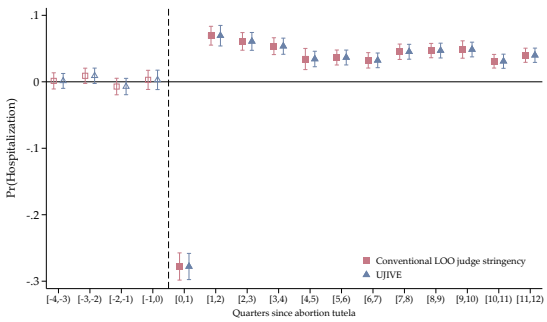
(e) Redeemed Antibiotic Rx



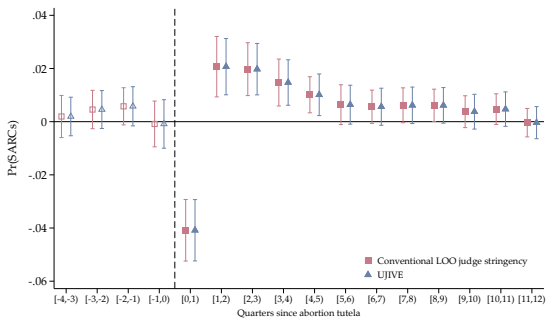
(f) ED Visits



(g) Hospitalizations

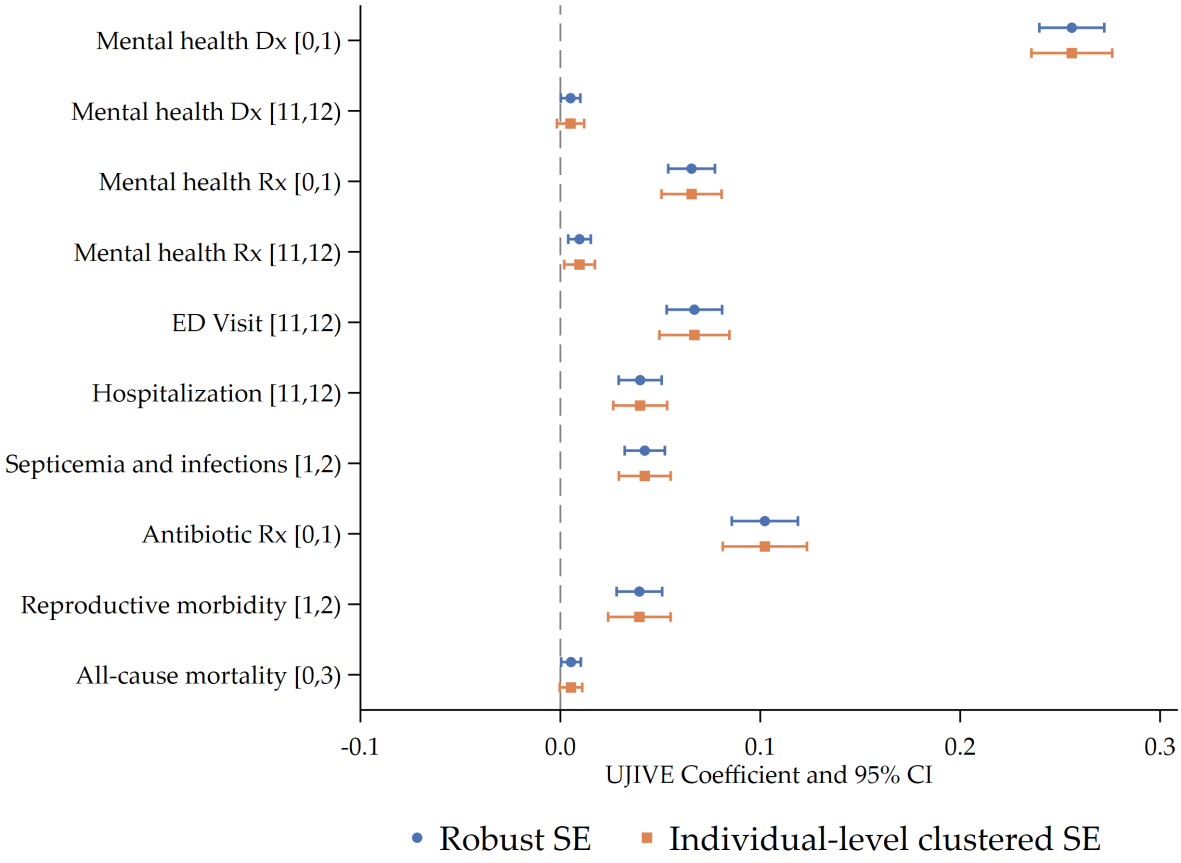


(h) Redeemed SARCs Rx



Notes. This figure compares the main estimated effects of abortion denial obtained using the UJIVE and a conventional leave-one-out judge leniency instrument. Panel (d) reports effects on septicemia and infection diagnoses after excluding diagnoses mechanically associated with pregnancies ending in abortion (selected ICD-10 codes within O03–O08). *Sources.* Authors' calculations using data from the Constitutional Court and SISPRO.

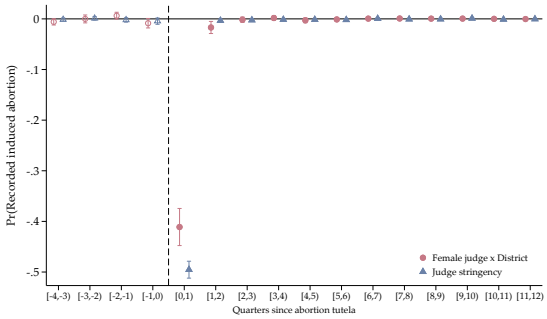
Figure A.7: Robustness to Clustering at the Woman Level



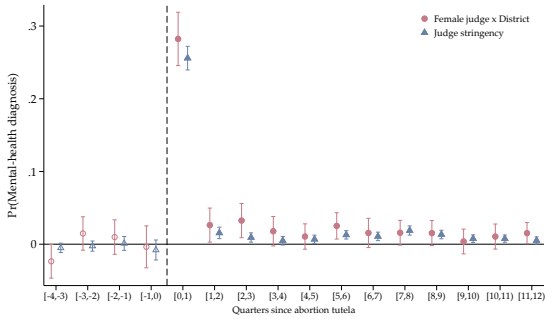
Notes. This figure compares the main UJIVE estimates using heteroskedasticity-robust standard errors and standard errors clustered at the woman level. Markers denote point estimates and horizontal lines indicate 95% confidence intervals. Only the standard errors—and therefore the confidence intervals—differ across specifications. *Sources.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Figure A.8: Impacts Using Judge Sex Indicator

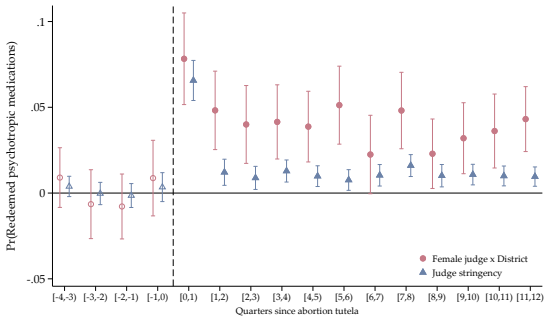
(a) Recorded Induced Abortion



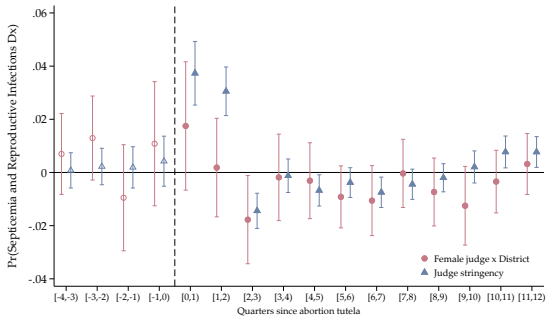
(b) Mental-Health Diagnosis



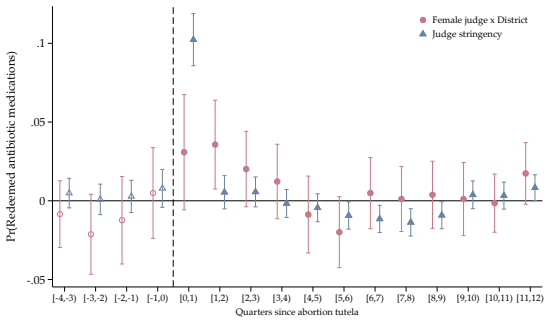
(c) Redeemed Psychotropic Rx



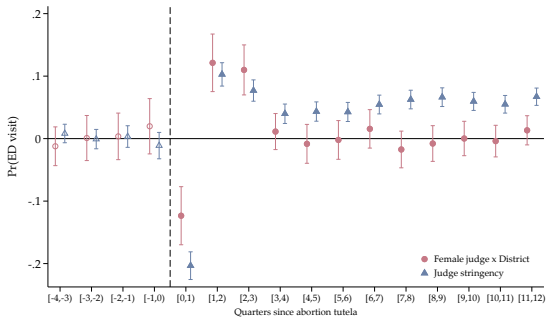
(d) Septicemia and Infections Dx



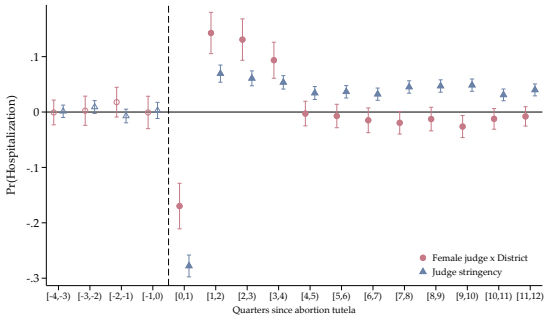
(e) Redeemed Antibiotic Rx



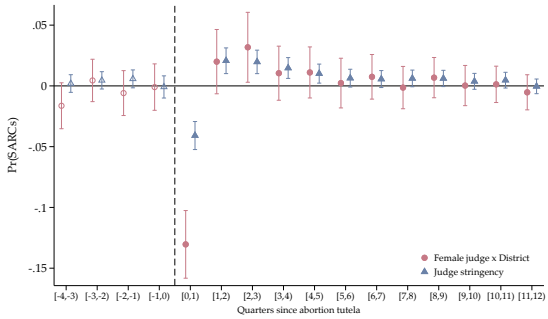
(f) ED Visits



(g) Hospitalizations

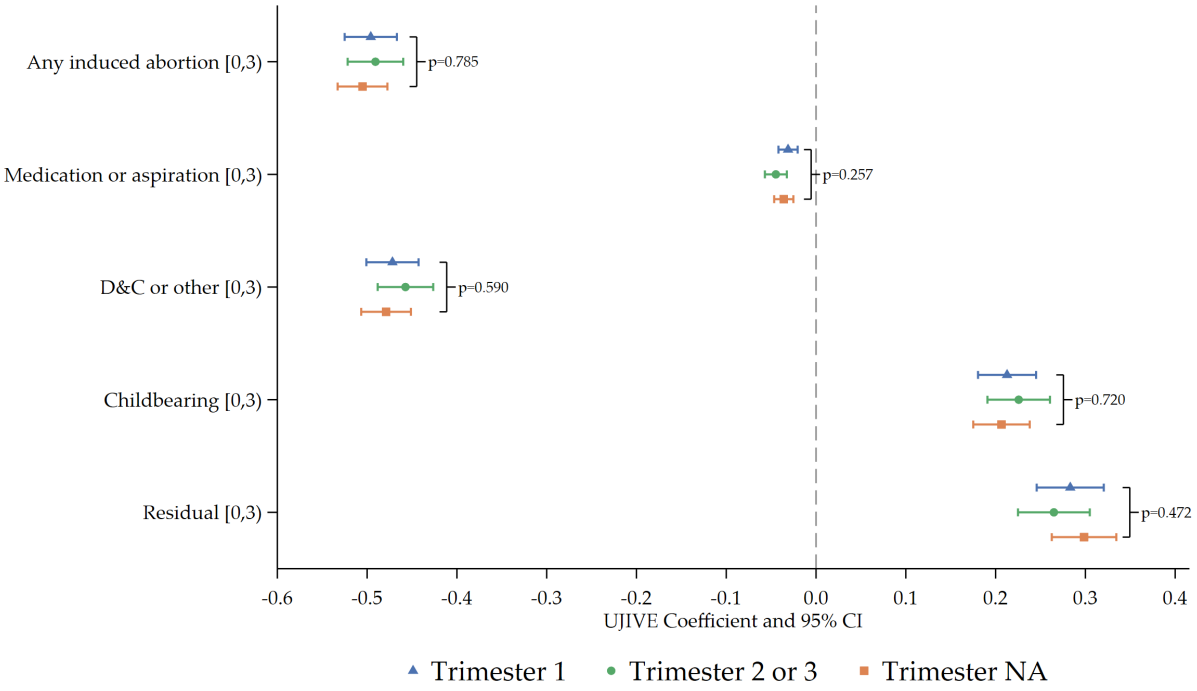


(h) Redeemed SARC Rx



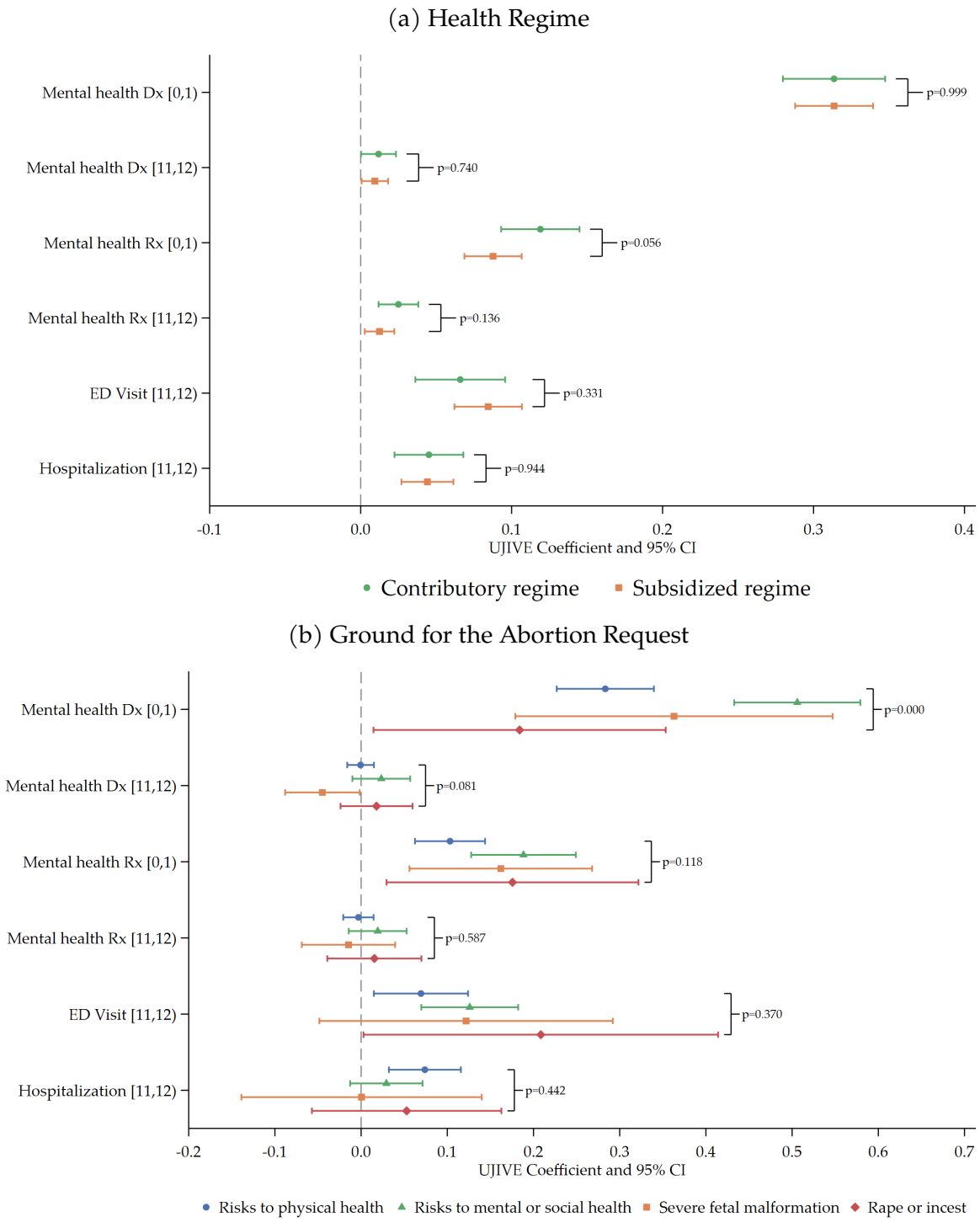
Notes. This figure compares the main estimated effects of abortion denial obtained using judge sex and judge stringency as alternative instruments. Panel (d) reports effects on septicemia and infection diagnoses after excluding diagnoses mechanically associated with pregnancies ending in abortion (selected ICD-10 codes within O03–O08). *Sources.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure A.9: Heterogeneity in Pregnancy Outcomes by Gestational Age



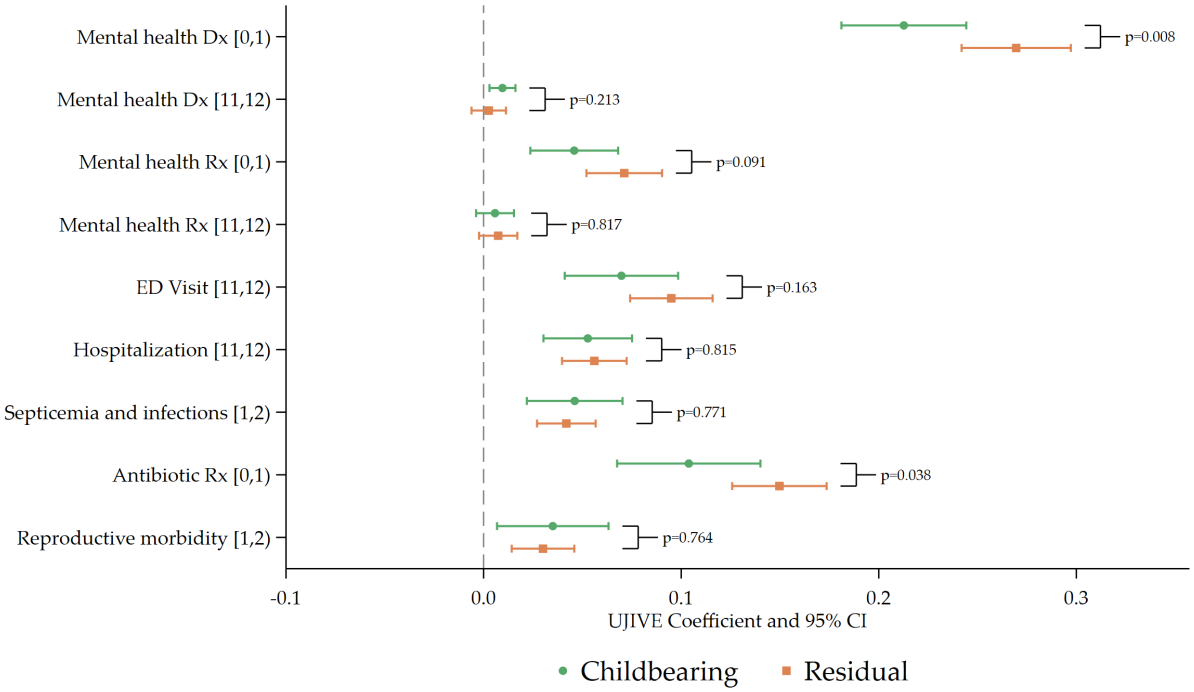
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1) for pregnancy outcomes by gestational age at filing. Outcomes are measured within three quarters of filing ([0,3)). *Source.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Figure A.10: Additional Heterogeneity Results



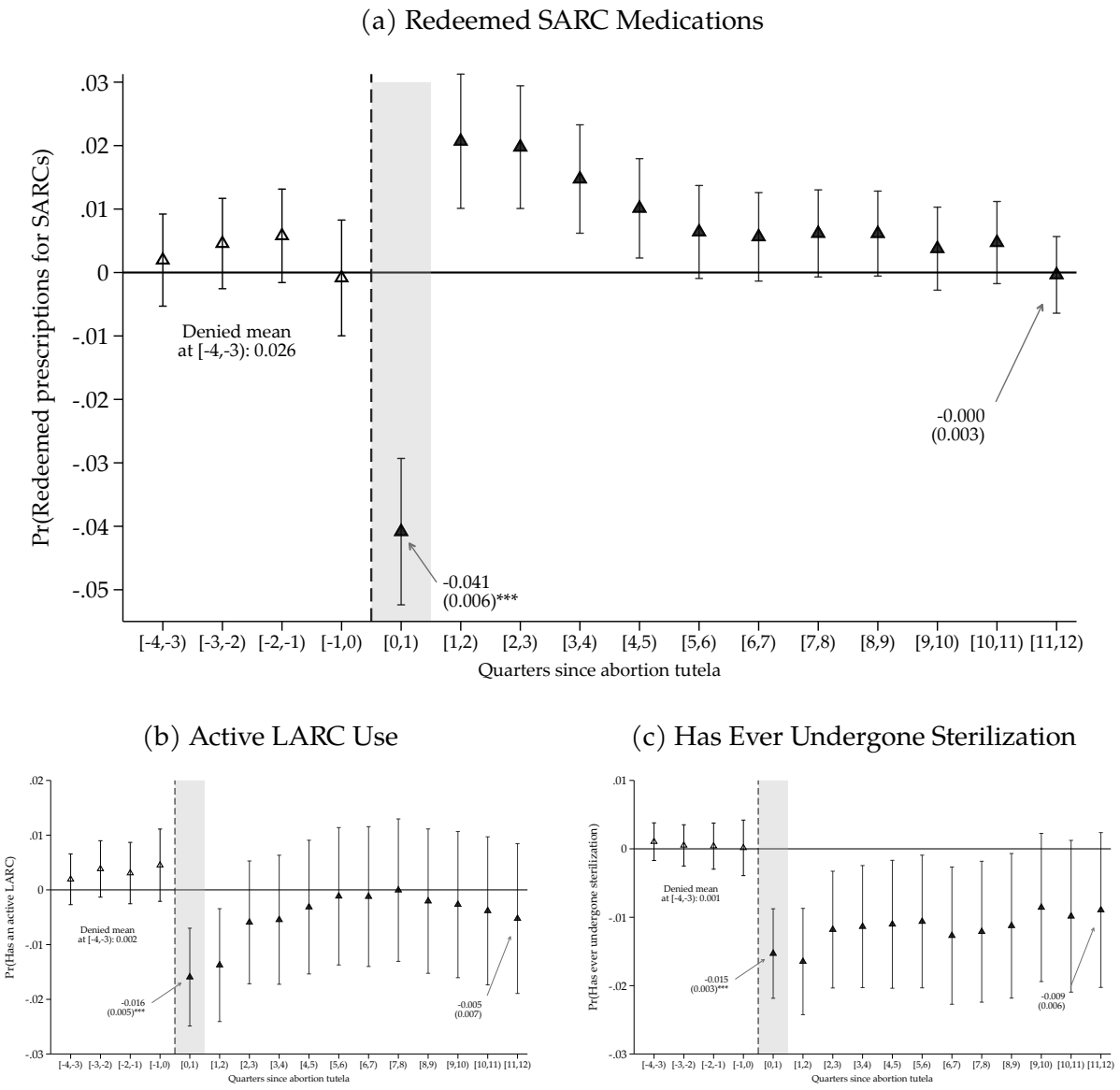
Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1) for selected health outcomes. Estimates are reported separately by health regime (panel a) and by the legal grounds invoked in the abortion-related *tutela* (panel b): risk to the woman's physical health, risk to her mental or social health, severe fetal abnormality, and rape or incest. Outcomes are measured in the filing quarter ([0,1)) and 11–12 quarters after filing ([11,12)). Panel (b) should be interpreted descriptively because the legal grounds invoked in the *tutela* are not randomly assigned. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Figure A.11: Pregnancy Resolution and Subsequent Health



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1) for selected health outcomes measured in the filing quarter ([0,1)), one quarter after filing ([1,2)), and 11–12 quarters after filing ([11,12)). Estimates are reported separately for women whose pregnancies ultimately resulted in a recorded live birth and those whose pregnancies resulted in neither a recorded induced abortion nor a recorded live birth. Because subsequent pregnancy resolution is itself affected by abortion denial, these subgroup estimates should not be interpreted causally. *Source.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Figure A.12: The Impact of Abortion Denial on Subsequent Contraceptive Behavior



Notes. This figure plots UJIVE coefficient estimates with 95% confidence intervals from specification (1). Panels (a) and (b) report effects on the indicated contraceptive outcomes in each quarter relative to filing, while panel (c) reports effects on the cumulative probability of ever undergoing sterilization by the end of each quarter. Estimates are shown from four quarters before filing to twelve quarters after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.1: Characteristics of Abortion-Related *Tutelas*

Involved party ($N = 108{,}126$)	Share of total			
Health insurer	65.5%			
Other (e.g., government)	27.7%			
Health provider	6.9%			
Gestational age ($N = 33{,}985$)	Mean	Min	Median	Max
Weeks at filing	13.6	3	11	33
Reported legal grounds	Share of total	Pr(denial)		
None reported (N = 81,486)	75.4%	50.4%		
At least one reported (N = 26,640)	24.6%	38.4%		
Conditional on reporting				
Woman's life or health	88.9%	39.8%		
Physical health	37.5%	41.1%		
Mental or emotional health	48.9%	39.6%		
Social health	4.5%	28.6%		
Fetal malformation	5.4%	34.4%		
Rape, incest, unwanted insemination	5.9%	20.6%		

Notes: This table summarizes information extracted from the texts of abortion-related *tutela*. Panel entries report the distribution of defendants, gestational age at filing when explicitly stated in the *tutela*, and the legal grounds invoked in support of the abortion request. Multiple legal grounds may be reported for a single *tutela*; therefore, the conditional shares need not sum to 100%. *Source:* Authors' calculations using data from the Constitutional Court.

Table A.2: Validation of Procedure-Based Gestational Trimester

	Procedure-based: Trimester 1	Procedure-based: Trimester 2 or 3
Tutela: Trimester 1	94.1%	5.9%
Tutela: Trimester 2 or 3	4.8%	95.2%

Notes. This table validates the procedure-based measure of gestational trimester using the gestational trimester reported in the abortion-related *tutela*. The sample is restricted to the 23,474 cases for which gestational trimester is both reported in the *tutela* and can be classified using administrative procedure codes. Entries are row percentages and report the percentage of observations in each *tutela*-based trimester classification assigned to the corresponding procedure-based classification. The two measures agree in 95.4% of cases (correlation = 0.946). *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.3: First Stage

	All			Bogotá		Medellín		Cali		Barranquilla	
	Judge Stringency (1)	Female Judge (2)	Female Judge × District (3)	Judge Stringency (4)	Female Judge (5)	Judge Stringency (6)	Female Judge (7)	Judge Stringency (8)	Female Judge (9)	Judge Stringency (10)	Female Judge (11)
γ	0.913***	-0.063***	331.705***	0.943***	0.025***	0.857***	-0.199***	0.465***	-0.086***	0.749***	-0.169***
	(0.010)	(0.003)	(0.000)	(0.011)	(0.004)	(0.027)	(0.007)	(0.080)	(0.010)	(0.055)	(0.011)
N	108,126	108,126	108,126	58,369	58,369	19,760	19,760	12,404	12,404	9,340	9,340
Kleibergen–Paap Wald F	8058.89	368.85	331.70	6937.46	32.09	977.22	721.07	33.66	74.88	186.11	237.25

Notes. This table reports first-stage estimates of the effect of judge stringency (Column 1), assignment to a female judge (Column 2), and the judge-sex instrument used in the analysis—the female judge indicator interacted with judicial district (Column 3)—on abortion denial. Because the effect of judge sex on abortion denial varies substantially across judicial districts, our preferred judge-sex instrument interacts the female judge indicator with judicial district. *Sources:* Authors' calculations using data from the Constitutional Court.

Table A.4: Selection into Abortion Denial and Balance of the Instruments

	Non-Denied Mean	Abortion Denial	Judge Stringency		Judge Sex × District
		OLS	OLS	UJIVE	OLS
	(1)	(2)	(3)	(4)	(5)
Prior health contact	0.806	-0.007***	0.004	0.004	1.383
		(0.003)	(0.009)	(0.009)	(0.238)
Prior PCP contact	0.415	-0.023***	0.005	0.006	1.247
		(0.003)	(0.010)	(0.011)	(0.289)
Age	24.722	-0.656***	-0.284	-0.324	0.876
		(0.057)	(0.186)	(0.209)	(0.478)
Subsidized regime	0.634	0.002	0.005	0.006	0.932
		(0.004)	(0.012)	(0.014)	(0.444)
Prior parity	0.202	-0.045***	-0.010	-0.011	0.768
		(0.002)	(0.009)	(0.009)	(0.546)
Area of residence					
Urban center	0.937	-0.005**	-0.003	-0.004	0.421
		(0.002)	(0.006)	(0.007)	(0.793)
Other populated centers	0.016	0.006***	0.002	0.002	0.340
		(0.001)	(0.003)	(0.004)	(0.851)
Rural area	0.033	-0.002*	0.002	0.003	0.590
		(0.001)	(0.004)	(0.005)	(0.670)
Inferred gestational age					
Trimester 1	0.351	-0.010***	-0.004	-0.004	0.255
		(0.003)	(0.010)	(0.011)	(0.907)
Trimester 2 or 3	0.296	-0.010***	-0.004	-0.004	0.677
		(0.003)	(0.010)	(0.011)	(0.608)
Trimester N.A.	0.354	0.020***	0.008	0.008	0.821
		(0.003)	(0.011)	(0.011)	(0.512)
ED visit	0.209	-0.002	-0.011	-0.012	0.229
		(0.003)	(0.009)	(0.010)	(0.922)
Hospitalization	0.115	-0.008***	0.001	0.001	0.354
		(0.002)	(0.007)	(0.007)	(0.842)
Mental health					
Diagnosis	0.059	0.056***	0.006	0.007	0.183
		(0.002)	(0.006)	(0.006)	(0.947)
Redeemed Rx	0.049	0.024***	0.003	0.004	1.241
		(0.001)	(0.005)	(0.005)	(0.291)
Joint F-test		137.450	1.133		0.486
p-value		0.000	0.322		0.942

Notes. Column (1) reports the mean among women whose *tutela* was not denied. Column (2) reports coefficients from OLS regressions of abortion denial on baseline claimant characteristics, illustrating the non-random selection of women into abortion denial. Columns (3) and (4) report analogous regressions replacing abortion denial with the judge-stringency instrument. Column (3) reports OLS estimates and Column (4) reports UJIVE estimates. Column (5) reports analogous OLS regressions using the alternative judge-sex instrument (female judge interacted with judicial district). All regressions include district-by-office-by-time fixed effects. Robust standard errors are shown in parentheses. Joint F-tests are reported for the OLS specifications only. *Sources.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.5: Frandsen et al. (2023) Tests of Monotonicity and Exclusion

Outcome	Without variance correction		With variance correction		
	F-stat	p-value	Wald stat	df	p-value
	(1)	(2)	(3)	(4)	(5)
Abortion	1,306.17	1.000	1,678.96	1,668	0.420
Mental health	1,592.52	0.952	1,596.88	1,668	0.892
ED visit	1,286.56	1.000	1,469.86	1,668	1.000
Hospitalization	1,289.92	1.000	1,507.71	1,668	0.998

Notes: This table reports the fit component of the test proposed by Frandsen et al. (2023) for the validity of judge fixed effects designs. Columns (1)–(2) report the F-statistic and p-value from jointly testing whether spline residuals differ across judges, without adjusting for the estimation of judge propensities. Columns (3)–(5) report the Wald statistic, degrees of freedom, and p-value using the sandwich variance estimator from Theorem 3 of Frandsen et al. (2023), which accounts for the two-step estimation of both the judge propensity and the spline coefficients. Under the null, the test statistic follows a χ^2 distribution with degrees of freedom equal to the number of judges minus the number of spline basis functions. All specifications are residualized by judicial district $\times$ office $\times$ quarter fixed effects. The Bonferroni weight is set to $\omega = 1$, as recommended for settings with many judges.

Table A.6: First Stage by Baseline Characteristics

	Judge Stringency (1)	Female Judge (2)
Above median age		
1	0.859	-0.083
	(0.016)	(0.016)
0	0.792	-0.039
	(0.018)	(0.020)
Subsidized regime		
1	0.836	-0.069
	(0.016)	(0.018)
0	0.819	-0.061
	(0.019)	(0.018)
Prior parity		
1	0.925	-0.040
	(0.038)	(0.029)
0	0.914	-0.068
	(0.011)	(0.020)
First trimester		
1	0.917	-0.042
	(0.019)	(0.022)
0	0.912	-0.072
	(0.013)	(0.021)
Prior ED visit		
1	0.904	-0.055
	(0.028)	(0.022)
0	0.917	-0.065
	(0.010)	(0.021)
Prior hospitalization		
1	0.895	-0.055
	(0.046)	(0.025)
0	0.913	-0.065
	(0.010)	(0.020)
Prior mental-health diagnosis		
1	0.829	-0.080
	(0.035)	(0.019)
0	0.917	-0.061
	(0.011)	(0.021)
Prior PCP contact		
1	0.929	-0.069
	(0.021)	(0.021)
0	0.902	-0.059
	(0.013)	(0.021)

Notes: This table presents the first stage across various groups of female claimants. Column (1) uses judge stringency as the instrument, while Column (2) uses judge sex as the instrument. All regressions include district-by-office-by-quarter fixed effects. Standard errors are shown in parentheses and are clustered at the judge level. *Sources:* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.7: Complier Characteristics

	Judge Stringency (1)	Female Judge × District (2)
Judicial district		
Medellín	0.136	0.734
Cali	0.009	0.059
Barranquilla	0.033	0.183
Bogotá	0.822	0.025
Prior health contact	0.808	0.753
Prior PCP contact	0.413	0.440
Age	24.111	26.373
Subsidized regime	0.633	0.624
Prior parity	0.192	0.112
Area of residence		
Urban center	0.938	0.881
Other populated centers	0.019	0.024
Rural area	0.027	0.040
Inferred gestational age		
Trimester 1	0.335	0.263
Trimester 2 or 3	0.301	0.287
Trimester N.A.	0.364	0.450
ED visit	0.195	0.199
Hospitalization	0.111	0.103
Mental health		
Diagnosis	0.073	0.108
Redeemed Rx	0.055	0.082
Observations	108,126	108,126

Notes. This table reports estimated baseline characteristics of compliers. Characteristics are recovered using 2SLS regressions of the interaction $Denied_i \times X_i$. Column (1) uses judge stringency, $Z_{j(i)}$, as the instrument, while Column (2) uses judge sex interacted with the judicial district. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.8: The Impact of Abortion Denial on Annual Mental-Health Outcomes

	Mental-Health Diagnosis						Mental-Health Rx	
	Any	Depression	Anxiety	Postpartum	PTSD	Other	Any	Antipsychotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. *Filing Year*								
	0.254	0.147	0.155	-0.000	0.003	-0.002	0.083	0.066
	(0.009)***	(0.007)***	(0.007)***	(0.000)	(0.002)*	(0.002)	(0.007)***	(0.005)***
Panel B. *Third year after filing.*								
	0.019	0.012	0.012	0.000	0.002	0.001	0.030	0.023
	(0.004)***	(0.003)***	(0.003)***	(0.000)	(0.001)	(0.001)	(0.005)***	(0.003)***
$\mu^{D}_{[-2,-1)}$	0.124	0.024	0.107	0.000	0.002	0.003	0.080	0.013

Notes. This table reports the effects of abortion denial on annual mental-health outcomes using specification (1). Panel (a) reports effects during the *tutela* filing year, and Panel (b) reports effects during the third years after filing. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.9: Persistent Effects of Abortion Denial on ED Visits and Hospitalizations by ICD-10 Chapter

	ED Visit (1)	Hospitalization (2)
Infectious diseases	0.006	0.007
	(0.002)***	(0.002)***
Mental health	-0.001	-0.001
	(0.001)	(0.001)
Circulatory	-0.000	0.000
	(0.001)	(0.000)
Respiratory	-0.003	-0.000
	(0.002)	(0.001)
Digestive	-0.004	-0.001
	(0.002)**	(0.001)
Genitourinary	0.014	0.010
	(0.002)***	(0.002)***
Pregnancy & childbirth	-0.004	-0.002
	(0.002)**	(0.002)
Symptoms, signs (including pain)	0.013	0.003
	(0.004)***	(0.002)**
Injury/poisoning	-0.000	-0.001
	(0.002)	(0.001)
Other	-0.005	-0.012
	(0.004)	(0.003)***

Notes. This table decomposes the effect of abortion denial on ED visits and hospitalizations twelve quarters after filing by ICD-10 chapter, using specification (1). Encounters are classified according to whether they include a principal or related diagnosis from each ICD-10 chapter: infectious diseases (A00–B99), mental health (F00–F99), circulatory (I00–I99), respiratory (J00–J99), digestive (K00–K93), genitourinary (N00–N99), pregnancy and childbirth (O00–O99), symptoms, signs, and pain-related diagnoses (R00–R99), and injury and poisoning (S00–T98). *Other* collects encounters not classified into these chapters. Because encounters may include diagnoses from multiple ICD-10 chapters, coefficients do not sum to the overall effect on ED visits or hospitalizations. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.10: The Impact of Abortion Denial on Mortality

		By cause of death	
	All	Septicemia or Infection	Other
	(1)	(2)	(3)
Panel A. *2SLS with judge stringency*			
	0.005**	0.006***	-0.000
	(0.003)	(0.002)	(0.001)
Panel B. *UJIVE with judge stringency*			
	0.005**	0.006***	-0.000
	(0.003)	(0.002)	(0.001)
Panel C. *2SLS with female judge* $\times$ *district*			
	0.032***	0.032***	-0.000
	(0.008)	(0.007)	(0.004)
μ^{ND}	0.013	0.009	0.004

Notes. This table reports the effects of abortion denial on mortality within nine months of filing. Columns (1), (2), and (3) report impacts on all-cause mortality, mortality due to septicemia or other infections, and mortality due to all other causes, respectively. Panel (a) uses the leave-one-out measure of judge stringency as the instrument. Panel (b) reports estimates using the UJIVE estimator based on judge stringency. Panel (c) uses an indicator for assignment to a female judge, interacted with the judicial district, as the instrument. The final row reports the corresponding mean among non-denied women.
Source. Authors' calculations using data from the Constitutional Court and Vital Statistics.

Table A.11: Mortality Estimates Using Alternative Instruments

	Judge stringency (UJIVE) (1)	Judge sex (IV) (2)
Panel A. *All judicial districts*		
Mortality within nine months	0.005**	0.032***
	(0.003)	(0.008)
μ^{ND}	0.013	0.013
Panel B. *Medellín*		
Mortality within nine months	0.025***	0.026***
	(0.009)	(0.009)
μ^{ND}	0.018	0.018

Notes. This table reports IV estimates of the effect of abortion denial on women's mortality within nine months of filing the abortion-related *tutela*. Panel (a) reports estimates for the full sample of abortion-related *tutelas* filed in Bogotá, Medellín, Cali, and Barranquilla. Panel (b) restricts the sample to abortion-related *tutelas* filed in the judicial district of Medellín. Column (1) reports estimates using the UJIVE estimator based on judge stringency, while Column (2) reports 2SLS estimates using assignment to a female judge as the instrument. The final row reports the corresponding mean among non-denied women for each panel. *Source.* Authors' calculations using data from the Constitutional Court and Vital Statistics.

Table A.12: The Impact of Abortion Denial on Mental Health: Heterogeneity

	Mental-Health Diagnosis						Mental-Health Rx	
	Any	Depression	Anxiety	Postpartum	PTSD	Other	Any	Antipsychotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. *Heterogeneity by Gestational Age*								
Trimester 1	0.198	0.139	0.084	-0.000	0.008	-0.004	0.055	0.045
	(0.014)***	(0.011)***	(0.009)***	(0.000)	(0.003)***	(0.003)	(0.010)***	(0.006)***
Trimester 2 or 3	0.372	0.138	0.302	-0.000	-0.002	-0.005	0.072	0.037
	(0.016)***	(0.012)***	(0.014)***	(0.000)	(0.003)	(0.003)	(0.011)***	(0.007)***
Trimester N.A.	0.213	0.153	0.097	-0.000	0.002	-0.001	0.071	0.044
	(0.013)***	(0.011)***	(0.009)***	(0.000)	(0.003)	(0.003)	(0.010)***	(0.007)***
Panel B. *Heterogeneity by Mental-Health History*								
Had prior diagnosis	0.345	0.221	0.219	-0.000	0.010	-0.007	0.119	0.042
	(0.023)***	(0.020)***	(0.019)***	(0.000)	(0.006)*	(0.005)	(0.018)***	(0.011)***
No prior diagnosis	0.235	0.126	0.139	-0.000	0.001	-0.002	0.053	0.042
	(0.009)***	(0.007)***	(0.007)***	(0.000)	(0.001)	(0.002)	(0.006)***	(0.004)***
Panel C. *Heterogeneity by Parity*								
Had prior births	0.334	0.194	0.202	-0.000	0.007	0.001	0.105	0.042
	(0.020)***	(0.016)***	(0.016)***	(0.001)	(0.005)	(0.005)	(0.015)***	(0.008)***
No prior births	0.237	0.131	0.143	-0.000	0.002	-0.004	0.056	0.043
	(0.009)***	(0.007)***	(0.007)***	(0.000)	(0.002)	(0.002)**	(0.007)***	(0.004)***
Panel D. *Heterogeneity by Prior PCP Contact*								
Prior PCP contact	0.287	0.174	0.168	-0.000	0.003	-0.005	0.087	0.039
	(0.014)***	(0.011)***	(0.011)***	(0.000)	(0.003)	(0.003)	(0.010)***	(0.006)***
No prior PCP contact	0.234	0.122	0.145	-0.000	0.002	-0.002	0.050	0.045
	(0.010)***	(0.008)***	(0.008)***	(0.000)	(0.002)	(0.002)	(0.007)***	(0.005)***

Notes. This table reports heterogeneity estimates of the effect of abortion denial on mental health diagnoses and psychotropic medication use by gestational age (Panel a), prior mental-health diagnosis (Panel b), parity (Panel c), and PCP contact (Panel d). *Source.* Authors' calculations using data from the Constitutional Court, SISPRO, and Vital Statistics.

Table A.13: The Impact of Abortion Denial on Subsequent Pregnancies and Pregnancy Outcomes

	Subsequent pregnancy					
	Any	Ectopic pregnancy	Spontaneous abortion	Fetal death or stillbirth	Serious pregnancy complications	High-risk pregnancy care
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. *Observed between months 10 and 36 after filing*						
	-0.044	0.001	-0.005	0.001	-0.000	-0.005
	(0.010)***	(0.002)	(0.002)**	(0.000)*	(0.005)	(0.005)
$\mu^{ND}_{[4,12)}$	0.165	0.011	0.013	0.000	0.045	0.054
Panel B. *Ever observed from month 10 onwards*						
	0.009	0.017	0.001	0.011	0.016	0.017
	(0.011)	(0.004)***	(0.004)	(0.001)***	(0.006)**	(0.007)**
$\mu^{ND}_{[4,.)}$	0.295	0.024	0.025	0.001	0.085	0.099

Notes: This table reports IV estimates of the effects of abortion denial on subsequent pregnancies and subsequent pregnancy outcomes. A subsequent pregnancy is defined as evidence of a pregnancy occurring at least ten months after filing the abortion-related *tutela*. Pregnancy-related encounters are measured beginning ten months after filing to exclude care related to the index pregnancy. Specifically, we identify subsequent pregnancies using any pregnancy-, childbirth-, or puerperium-related diagnosis (ICD-10 codes O00–O99) or any procedure code used to infer gestational age. Ectopic pregnancy is identified using ICD-10 code O00. Spontaneous abortion (miscarriage) is identified using ICD-10 code O03. Fetal death or stillbirth is identified using ICD-10 code O36.4. Serious pregnancy complications are identified using ICD-10 codes O15, O20, O23, O45, O46, O75, and N82, while high-risk pregnancy care is identified using ICD-10 codes O34, O47, O82, and O83. Panel (a) reports effects on the probability that each outcome is observed between 10 and 36 months after filing. Panel (b) reports effects on whether each outcome is ever observed from month 10 through December 31, 2025. The final row reports the corresponding outcome mean among non-denied women for each panel. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

Table A.14: Decomposition of Physical and Reproductive Morbidity Effects by Subsequent Pregnancy

	Septicemia and Severe Reproductive Infections				Reproductive Morbidity	
	Genitourinary infections	Sepsis and septic shock	Puerperal infections	Unspecified bacterial infections	Abdominal and pelvic pain	Gynecologic conditions
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. *Ever between 10 and 36 months from filing*						
	0.007	0.001	0.000	0.002	-0.005	0.005
	(0.007)	(0.001)	(0.001)	(0.001)	(0.009)	(0.003)*
Panel B. *Heterogeneity by subsequent pregnancy*						
Subsequent pregnancy = 1	0.041*	-0.000	0.002	0.003	0.087***	0.003
	(0.023)	(0.002)	(0.004)	(0.004)	(0.027)	(0.010)
Subsequent pregnancy = 0	0.007	0.001	—	0.001	-0.012*	0.007**
	(0.007)	(0.001)	(—)	(0.001)	(0.007)	(0.003)
p-value (difference across groups)	0.165	0.601	—	0.573	0.000	0.727

Notes. This table decomposes the effects of abortion denial on physical morbidity measured between 10 and 36 months after filing, by whether the woman experiences a subsequent pregnancy during the same period. Subsequent pregnancy is identified using pregnancy-, childbirth-, and puerperium-related diagnoses (ICD-10 codes O00–O99) or any procedure code used to infer gestational age. *Source.* Authors' calculations using data from the Constitutional Court and SISPRO.

B Definitions of Outcomes and Gestational Age

- *Gestational age.* SISPRO uses the World Health Organization's standard ICD-10 classification—not the U.S. ICD-10-CM adaptation that includes codes Z3A.xx for "weeks of gestation", which exists only in ICD-10-CM. Therefore, we infer gestational age based on the following CUPS procedure codes:
  - First trimester (up to 13 weeks and 6 days, inclusive) if administration of hCG (CUPS code 904508), hCG test (CUPS code 906625 and 906626), transvaginal obstetric ultrasound (CUPS code 881432), obstetric ultrasound with nuchal translucency (CUPS code 881436), PAPP-A (CUPS code 903048), PAPP-A and free β-hCG (CUPS code 903049)
    - For two procedures—transvaginal pelvic ultrasound (CUPS code 881401) and transabdominal obstetric ultrasound (CUPS code 881431)—we assume first trimester *if and only if there is no procedural code from more advanced gestational ages*.
  - Second and third trimester (14 weeks and above) if second-level obstetric ultrasound (CUPS code 881434), obstetric ultrasound in the third trimester / fetal growth (CUPS code 881435), obstetric ultrasound with detailed fetal anatomical assessment (CUPS code 881437), obstetric diagnostic amniocentesis (CUPS codes 751100 and 751101), therapeutic amniocentesis (CUPS code 751200), antepartum fetal monitoring (CUPS code 897011), triple-marker test (CUPS code 903050), obstetric Doppler ultrasound with evaluation of placental circulation (CUPS code 882298), and glucose tolerance test (CUPS codes 903885 and 903886).
- *Induced abortion.* We identify induced abortions using information on abortion-related medications (ATC codes) and procedures (CUPS codes). For each calendar quarter, we construct an indicator equal to one if an individual receives any abortion medication or undergoes any abortion-related procedure.
  - Medications include the following ATC codes: A02BB01 and G02AD06 (Misoprostol), G03AD01 and G03XB01 (Mifepristone), and G02AD02 (Dinoprostone).
  - Procedures include the following CUPS codes:
    - 695101 (vacuum aspiration of the uterus for termination of pregnancy)

    - 750101 (obstetric uterine curettage postpartum or post-abortion by dilation and curettage)
    - 750105 (obstetric uterine curettage postpartum or post-abortion by vacuum aspiration)
    - 750201 (dilation and curettage for termination of pregnancy)
    - 750301 (uterine evacuation for termination of pregnancy by dilation and curettage)
    - 750302 (uterine evacuation for termination of pregnancy by vacuum aspiration)
    - 750303 (uterine evacuation for termination of pregnancy by other methods)

  Because some of these procedures are also used in postpartum care, we do not classify an observation as an induced abortion if vital statistics records indicate a live birth within nine months of the *tutela* filing date.

  In our main analysis, we do not rely on diagnoses to identify abortions. Although relevant ICD-10 codes exist (e.g., O04 for medical induction), evidence from other settings suggests that providers frequently record abortion-related care under alternative codes—for example, classifying medical abortions as spontaneous (O03)—rather than documenting them explicitly (Suh, 2014).

- *Mental-health diagnoses.* To diagnose mental health conditions, physicians evaluate whether a patient has experienced specific symptoms within the previous two weeks. If the diagnostic criteria for depression are met, the physician then determines whether the condition constitutes a depressive episode—defined as a first occurrence—or a depressive disorder, which involves multiple episodes separated by remission periods.[1] The diagnosis is subsequently classified as primary if depression is the main reason for the visit, or secondary if it is not. We identify individuals with mental health conditions if either the primary or secondary diagnosis corresponds to any of the following ICD-10 codes:

  - Schizophrenia and related disorders: F20–F29, F06.0, F06.2
  - Bipolar disorder: F30, F31, F34.0, F38.0
  - Depression: F32, F33, F34.1, F38.1
  - Anxiety, neurotic, and stress-related disorders: F064, F40, F41, F42, F43.0, F48.8, F48.9,

[1] An episode refers to the first onset of depression; a disorder requires recurrent episodes with intervening remission.

- PTSD: F43.1, F43.2, F43.8, F43.9
- Postpartum: F53
- Other mood disorders: F34.8, F34.9, F39, F54, R45
- Eating disorders: F50
- Personality disorders: F60–F69
- Disorders due to psychoactive substance abuse: F10–F19
- Suicide attempt: X60–X84

- *Psychotropic medications.* Prescription drugs are classified using the ATC classification system. We define psychotropic medications as drugs belonging to ATC groups N05 (psycholeptics) and N06 (psychoanaleptics). Antipsychotics are defined as medications with ATC codes beginning with N05A, excluding lithium (N05AN), which is primarily used as a mood stabilizer rather than an antipsychotic. Because individual psychotropic medications are prescribed for multiple conditions and many specific drug classes are relatively uncommon, our analysis focuses on the extensive margin of medication use—whether an individual redeems any psychotropic medication—rather than on specific medications. Medication data are unavailable for 2009 and 2012.

- *Mental-health consultations:*
  - We define psychological consultations to include: (i) initial psychology consultations (CUPS 890208), (ii) follow-up psychology consultations (CUPS 890308), (iii) psychology interconsultations (CUPS 890408), (iv) inpatient psychology consultations (CUPS 890608), (v) individual psychotherapy provided by a psychologist (CUPS 943102), (vi) initial consultations in other psychology specialties (CUPS 890297), and (vii) follow-up consultations in other psychology specialties (CUPS 890397).
  - We define psychiatric consultations to include: (i) initial consultations with a psychiatrist (CUPS 890284), (ii) initial consultations with a child and adolescent psychiatrist (CUPS 890285), (iii) follow-up consultations with a child and adolescent psychiatrist (CUPS 890385), (iv) individual psychotherapy provided by a psychiatrist (CUPS 943101), (v) psychiatric interconsultations (CUPS 890484), and (vi) child and adolescent psychiatric interconsultations (CUPS 890485).

- *Physical health diagnoses.* We identify physical health issues using the incidence of ED visits and hospitalizations. We identify morbidities using the following ICD-10 codes:
  - Infections:
    - Abortion-related infections: O03.0, O03.5, O04.0, O04.5, O05.0, O05.5, O06.0, O06.5, O07.0, O07.5, O08.0
    - Puerperal infections: O85–O86
    - Sepsis and septic shock: A40, A41, A48.0, R57.2
    - Genitourinary and reproductive infections: N39.0, N70–N73
    - Unspecified bacterial infections: A49.8, A49.9
  - Abdominal and pelvic pain, and menstrual or gynecologic conditions:
    - Pelvic, lower abdominal, and unspecified abdominal pain: R10.2, R10.3, R10.4
    - Pain and other conditions associated with female genital organs and the menstrual cycle: N94
- *Redeemed antibacterial medications:* Prescription drugs are classified according to the ATC classification system. We identify redeemed antibiotic medications using the ATC category: antibacterials for systemic use (J01), which captures systemic antibacterial drugs. Medication data are unavailable for 2009 and 2012.
- *Redeemed analgesic prescriptions:* We identify redeemed analgesic prescriptions using the following ATC categories: nonsteroidal anti-inflammatory drugs (NSAIDs; ATC M01A), opioids (ATC N02A), and non-opioid analgesics and antipyretics (ATC N02B).
- *Subsequent pregnancy outcomes:*
  - Any pregnancy: ICD-10 codes O00-O99 or any procedure used to infer gestational age. This measure captures later pregnancy-related care, including prenatal care, delivery-related encounters, and puerperal complications associated with subsequent pregnancies.
  - Ectopic pregnancy: O00
  - Spontaneous abortion (miscarriage): O03
  - Fetal death or stillbirth: O36.4

  - Serious pregnancy complications: O15, O20, O23, O45, O46, O75, and N82
  - High-risk pregnancy care and delivery: O34, O47, O82, and O83

- *Contraceptive behavior.*
  - *SARCs.* Prescription drugs: Hormonal contraceptives for systemic use (ATC codes G03A, excluding G03AC subdermal contraceptive implants and G03AD emergency contraceptive combinations), vaginal ring (G02BB01), spermicides (G02BB02).
  - *LARCs.*
    * Prescription drugs: subdermal contraceptive implants (ATC code G03AC).
    * Procedures: subdermal contraceptive implant (CUPS code 861801) and intrauterine contraceptive device (CUPS codes 697100 and 697101), minus extraction of subdermal contraceptive implant (CUPS code 861203) and minus extraction of IUD (CUPS code 977100)
  - *Sterilization.* Procedures: hysterectomy (CUPS codes 683100–687000), sterilization (CUPS codes 663910), and tubal ligation (CUPS codes 662101–662204, 662200, 663100), salpingectomy (664001, 664002, 665001, 665002), salpingo-oophorectomy (669210, 669220).