

## Supplementary Analyses

We conducted supplementary analyses where we restricted our outcome to having an ICD-10 code of X60 to X84 or NOMESCO code 4. As reported in the paper, analyses were remarkably similar. More specific results are presented here.

A total of 527,105 women were included in the supplementary analyses, and 8,706 were excluded because they had a suicide attempt before the study began. Of these 527,105, 50,468 had a record of at least one first-trimester abortion, and 6,416 women had a suicide attempt during the study period. 876 had a first suicide attempt after a first abortion.

Descriptive information of the study sample is presented in Table S1, as well as information by whether or not women had an abortion during the study period. Having an abortion was associated with having a childbirth, having prior mental health indicators, having parents with mental health indicators, worse physical health, and parental education level; most noteworthy were the associations between having an abortion and having a childbirth, and having an abortion and prior antidepressant use.

The number of women attempting suicide by study variables and the unadjusted rate of suicide attempts per 1000 woman-years at risk are presented in Table S2. Relative to women having no abortion ( $n = 476,637$ ), women's unadjusted rates of suicide attempts were higher in the year before, the year after, and 1-5 years after, but the same 5+ years after an abortion. The unadjusted rate of first suicide attempt was the same in the year before (IR = 5.42, 95% CI: 4.79-6.13) and after (IR = 5.70, 95% CI: 5.06-6.42),  $p = 0.57$ , and decreased with more time from the abortion.

Results from the survival analysis are presented in Table S3. In the basic and fully adjusted model, relative to women who had not had an abortion, women who had an abortion

had a higher risk of first-time suicide attempt. However, this risk of first-time nonfatal suicide attempts was similar in the year before (basic: IRR = 3.55, 95% CI: 3.13-4.03; and fully-adjusted: IRR = 2.24, 95% CI: 1.97-2.54) and after an abortion (basic: IRR = 4.10, 95% CI: 3.63-4.63,  $p = 0.08$ , and fully-adjusted: IRR = 2.47, 95% CI: 2.18-2.79,  $p = 0.17$ ) and decreased with more time after the abortion (1-5 years basic: IRR = 2.88, 95% CI: 2.60-3.18; fully-adjusted: IRR = 1.68, 95% CI: 1.52-1.86; 5+ years: basic: IRR = 2.55, 95% CI: 2.17-2.99; fully-adjusted: IRR = 1.44, 95% CI: 1.22-1.69). Furthermore, the strength of the association between abortion and first nonfatal suicide attempts decreased from the basic model to the model fully-adjusted, indicating that pre-existing mental health, parental mental health, childbirth, physical health, and socioeconomic status are confounding the association between abortion and suicide attempts.

Across all women in the sample ( $n = 527,105$ ), the strongest risk factors of suicide attempts (Table S3) in the fully-adjusted model were having a previous psychiatric contact (IRR = 10.30, 95% CI: 9.65-11.00), previously obtaining an antidepressant (IRR = 2.54, 95% CI: 2.39-2.71), previously obtaining antianxiety medication (IRR = 1.41, 95% CI: 1.33-1.50), and previously obtaining antipsychotic medication (IRR = 1.62, 95% CI: 1.52-1.73).

Examining the incidence rates in monthly increments during the year before and after an abortion, we found rates of suicide attempts were relatively stable for all women having an abortion, for women with a previous psychiatric contact having an abortion, and for women without a previous psychiatric contact having an abortion (Figure S1). When we compared the incident rates from the whole year before to the whole year after the abortion for all women, women with a previous psychiatric contact, and women without a previous psychiatric contact, there were no changes from the year before (all women IR = 5.42, 95% CI: 4.79-6.13; women

with a previous psychiatric contact IR = 21.42, 95% CI:18.28-25.10; women without a previous psychiatric contact IR = 2.52; 95% CI:2.07-3.06) to the year after an abortion (all women IR = 5.70, 95% CI: 5.06-6.42,  $p = 0.57$ ; women with a previous psychiatric contact IR = 21.01, 95% CI:18.03-24.48,  $p = 0.86$ ; women without a previous psychiatric contact IR = 2.68; 95% CI:2.21-3.24,  $p = 0.65$ ). Furthermore, suicide attempt rates in the year before and after the abortion differed by whether women had a previous psychiatric contact as indicated by the non-overlapping confidence intervals in Figure 1B.

Figure S2 presents age and calendar-year adjusted incidence rate ratios (IRRs) of first-time suicide attempts in monthly increments from the year before and after an abortion respectively compared to the 11<sup>th</sup> and 12<sup>th</sup> month beforehand (our defined reference group). Panel A presents IRRs for all women who had an abortion; Panel B for all women who had an abortion who had a previous psychiatric contact; and Panel C for all women who had an abortion without a previous psychiatric contact. The three panels show that there is no change in the monthly rates relative to the 11<sup>th</sup> and 12 months before an abortion for the other months in the year before and after an abortion.

There are four rates in Figure 1, Panel B, and Figure 2, Panel C not included because two of these rates had less than or equal to 3 women having suicide attempts during that month. For confidentiality reasons, we are not allowed to disclose which ones of the four have less than or equal to 3.

Table 1. Descriptive information of total sample, those having a first trimester abortion, and those not having a first-trimester abortion

	Total (n = 527,105)	Abortion (n = 50,468)	No abortion (n = 476,637)
<b>Childbirth</b>			
No	68.3%	42.2%	71.1%
Yes	31.7%	57.8%	28.9%
<b>Prior psychiatric contact</b>			
No	84.3%	73.7%	85.4%
Yes	15.7%	26.3%	14.6%
<b>Prior antidepressant medication</b>			
No	81.9%	66.7%	83.5%
Yes	18.1%	33.3%	16.5%
<b>Prior antianxiety medication</b>			
No	86.9%	78.8%	87.8%
Yes	13.1%	21.2%	12.2%
<b>Prior antipsychotic medication</b>			
No	95.0%	90.0%	95.6%
Yes	5.0%	10.0%	4.4%
<b>Father's history of psychiatric contact</b>			
No	90.0%	85.4%	90.5%
Yes	10.0%	14.6%	9.5%
<b>Mother's history of psychiatric contact</b>			
No	88.0%	82.8%	88.6%
Yes	12.0%	17.2%	11.4%
<b>Charlson Comorbidity Index</b>			
0	87.8%	85.6%	88.0%
1	11.0%	12.7%	10.8%
2 or more	1.2%	1.7%	1.2%
<b>Mother's education when women was 15</b>			
Level 1	24.4%	36.4%	23.2%
Level 2	3.1%	2.7%	3.2%
Level 3	1.5%	0.9%	1.6%
Level 4	35.5%	33.6%	35.7%
Level 5	3.7%	2.7%	3.8%
Level 6	21.1%	15.8%	21.7%
Level 7	0.7%	0.3%	0.8%
Level 8	4.8%	2.3%	5.1%

Level 9	0.3%	0.1%	0.3%
Unknown	4.7%	5.2%	4.7%
<b>Father's education when women was 15</b>			
Level 1	21.9%	30.1%	21.0%
Level 2	2.9%	2.6%	3.0%
Level 3	1.0%	0.7%	1.1%
Level 4	41.7%	40.7%	41.8%
Level 5	5.2%	3.8%	5.3%
Level 6	10.6%	7.4%	11.0%
Level 7	0.6%	0.3%	0.6%
Level 8	7.6%	4.2%	8.0%
Level 9	0.7%	0.3%	0.7%
Unknown	7.8%	9.8%	7.5%

Note. All variables differ by whether the woman had an abortion during the study period or not,  $p < 0.0001$ .

Supplementary Table 2 (ST2). Study Variables by First-time Suicide Attempts (ICD 10 codes X60 to X84 or NOMESCO code 4)

	Number of women with first suicide attempts (n = 6,416)	Woman-years at risk of first suicide attempts (n = 4,578,416 years)	Unadjusted rate of first suicide attempt per 1000 woman-years at risk (95% CI)
<b>Abortion</b>			
No abortion	5,288	4,179,240	1.27 (1.23-1.30)
Year before abortion	252	46,504	5.42 (4.79-6.13)
Year after abortion	270	47,378	5.70 (5.06-6.42)
1-5 years after abortion	431	155,081	2.78 (2.53-3.05)
5 + years after abortion	175	150,212	1.17 (1.00-1.35)
<b>Childbirth</b>			
No childbirth	5,809	3,695,057	1.57 (1.53-1.61)
Childbirth	607	883,358	0.69 (0.63-0.74)
<b>Prior psychiatric contact</b>			
No	2109	4,091,731	0.52 (0.49-0.54)
Yes	4307	486,684	8.85 (8.59-9.12)
<b>Prior antidepressant medication</b>			
No	2,995	3,958,831	0.75 (0.73-0.78)
Yes	3,421	619,584	5.52 (5.34-5.71)
<b>Prior antianxiety medication</b>			
No	4,557	4,162,564	1.10 (1.07-1.13)
Yes	1,839	415,851	4.42 (4.22-4.63)
<b>Prior antipsychotic medication</b>			
No	4,873	4,442,062	1.10 (1.07-1.13)
Yes	1,543	136,354	11.32 (10.77-11.90)
<b>Mother's history of psychiatric contact</b>			
No	5,137	4,126,352	1.24 (1.21-1.28)
Yes	1,279	452,063	2.83 (2.68-2.99)
<b>Father's history of psychiatric contact</b>			
No	5,356	4,191,176	1.28 (1.24-1.31)
Yes	1,060	387,240	2.74 (2.58-2.91)
<b>Charlson Comorbidity Index</b>			
0 (none)	5,531	4,156,123	1.33 (1.30-1.37)
Score of 1	713	327,334	1.81 (1.56-2.10)
Score of 2 or more	172	94,958	2.18 (2.02-2.34)

Supplementary Table 3 (ST3). Adjusted Incidence Rate Ratios (and 95% CI) of Suicide Attempt (ICD 10 codes X60 to X84 or NOMESCO code 4) by Time Relative to First-abortion (n = 527,105)

	<b>Basic Model*</b>	<b>Fully adjusted model**</b>
<b>Abortion</b>		
No abortion***	1.00 (reference)	1.00 (reference)
Year beforehand abortion	3.55 (3.13-4.03)	2.24 (1.97-2.54)
Year after abortion	4.10 (3.63-4.63)	2.47 (2.18-2.79)
1-5 years after abortion	2.88 (2.60-3.18)	1.68 (1.52-1.86)
5 + years after abortion	2.55 (2.17-2.99)	1.44 (1.22-1.69)
<b>Childbirth</b>		
No	---	1.00 (reference)
Yes	---	0.69 (0.63-0.76)
<b>Prior psychiatric contact</b>		
No	---	1.00 (reference)
Yes	---	10.30 (9.56-11.00)
<b>Prior antidepressant medication</b>		
No	---	1.00 (reference)
Yes	---	2.54 (2.39-2.71)
<b>Prior antianxiety medication</b>		
No	---	1.00 (reference)
Yes	---	1.41 (1.33-1.50)
<b>Prior antipsychotic medication</b>		
No	---	1.00 (reference)
Yes	---	1.62 (1.52-1.73)
<b>Mother's history of psychiatric contact</b>		
No	---	1.00 (reference)
Yes	---	1.11 (1.04-1.18)
<b>Father's history of psychiatric contact</b>		
No	---	1.00 (reference)
Yes	---	1.23 (1.15-1.32)
<b>Charlson Comorbidity Index</b>		
0 (none)	---	1.00 (reference)
Score of 1	---	1.22 (1.13-1.32)
Score of 2 or more	---	1.05 (0.90-1.22)

\*Model includes abortion, age, and cohort (calendar year)

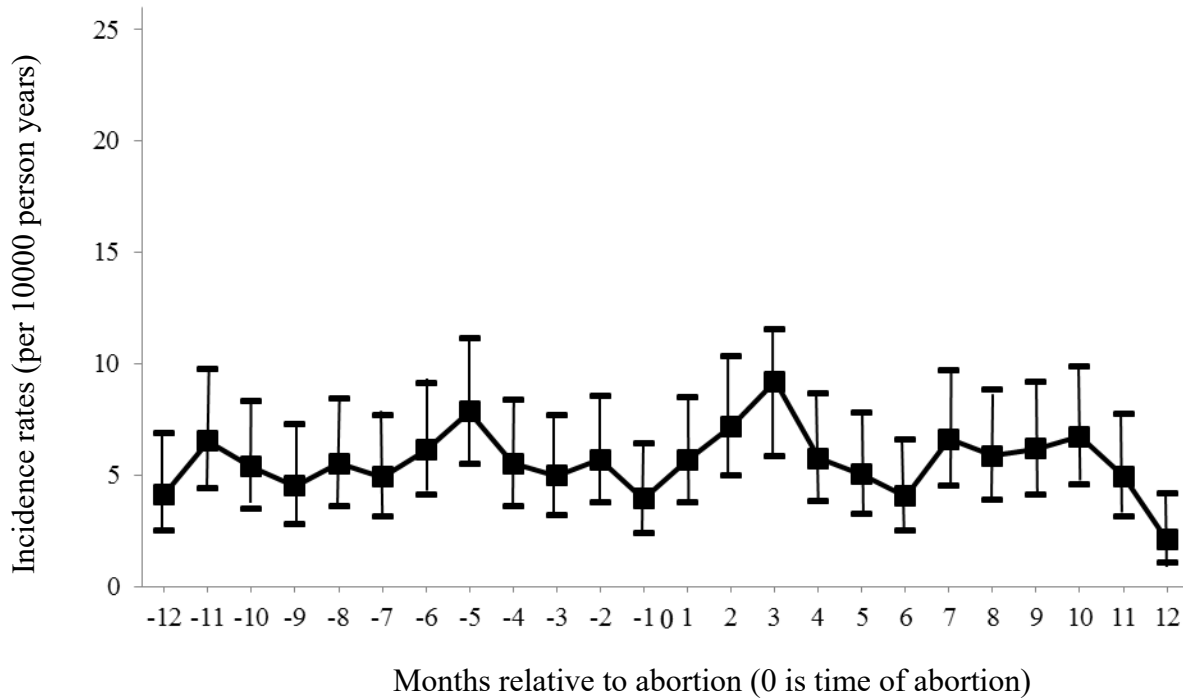
\*\*Model includes abortion, childbirth, age, cohort (calendar year), history of psychiatric contact, history of antianxiety medication, history of antipsychotic medication, mother's and father's history of psychiatric illness, and mother's and father's education level when woman was 15 years old

\*\*\*Excluding the year prior to first abortion

---not included in basic model

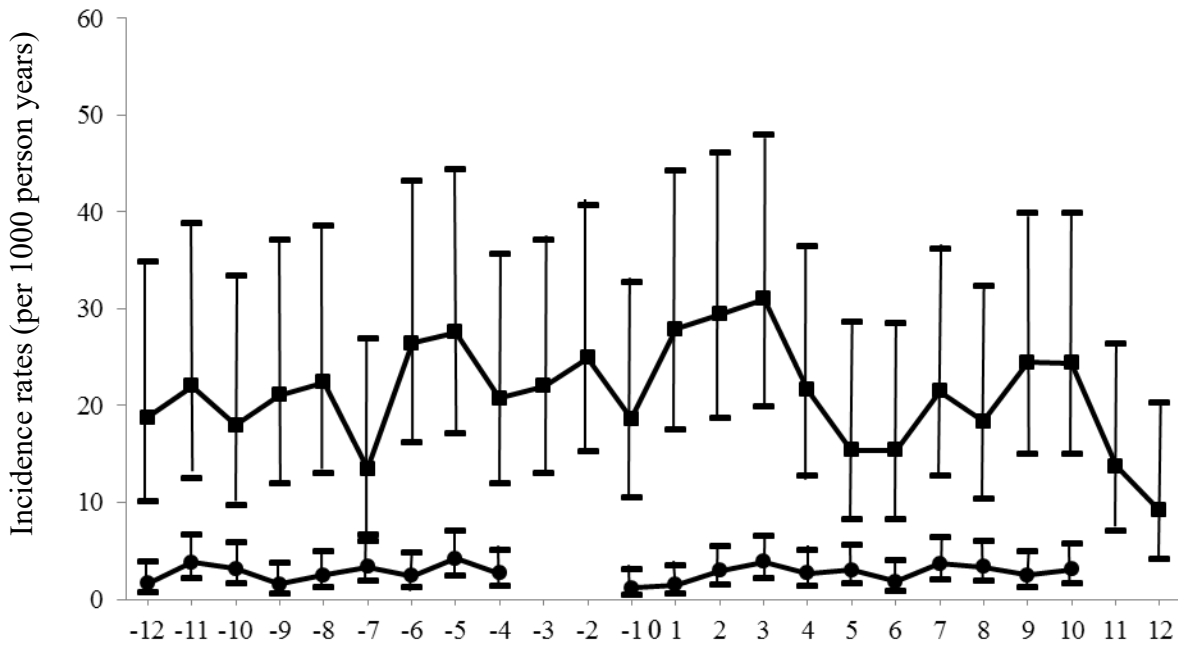
Supplementary Figure 1. Unadjusted Incidence Rates of First Suicide Attempt (using only ICD-10 codes of X60 to X84 and NOMESCO code 4) in the Year Before and Year After a First First-trimester Abortion. Panel A: All Women Having an Abortion; Panel B: Women Having an Abortion Stratified by History of Psychiatric Contact.

Panel A. Women having had a first first-trimester abortion (n = 50,468)





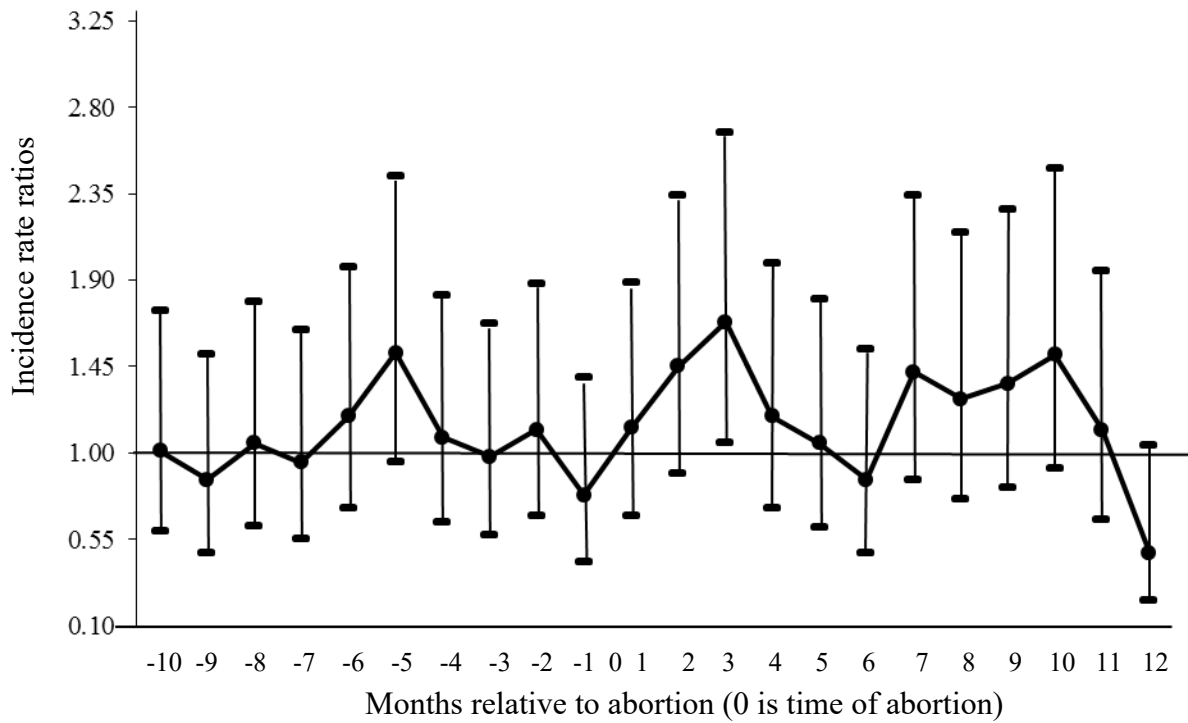
Supplementary Panel B. Women having had a first first-trimester abortion stratified by prior psychiatric contact



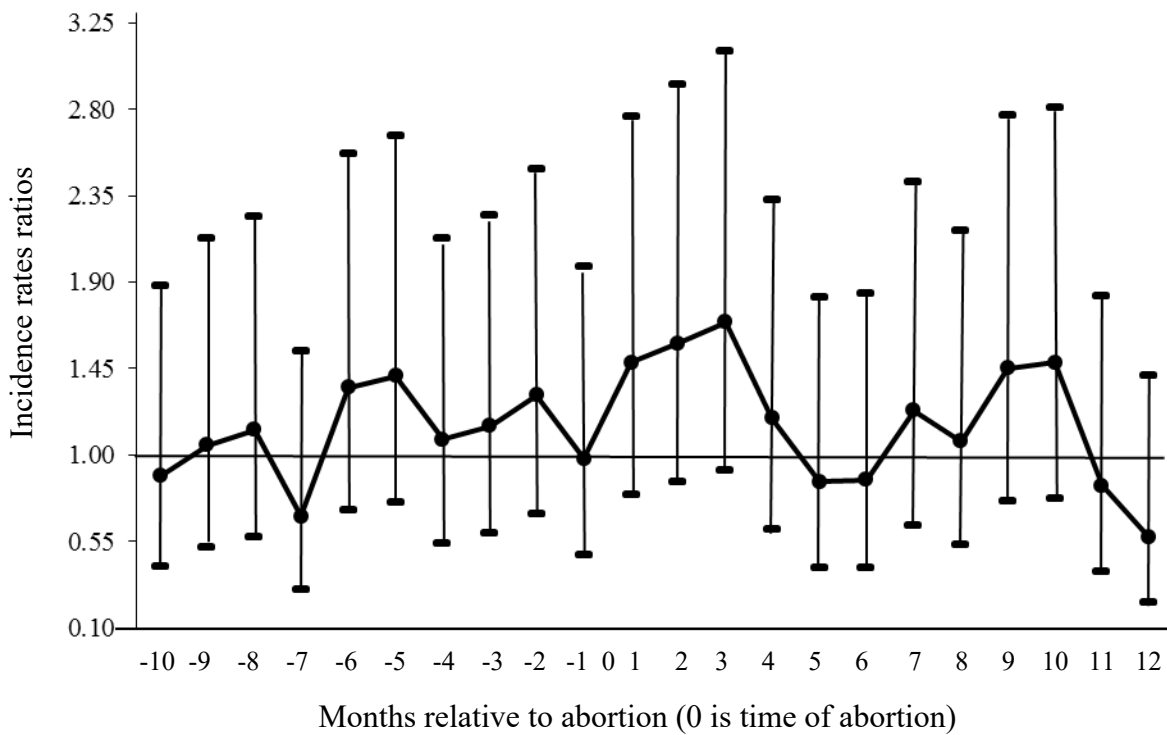
Supplementary Figure 1. Months relative to abortion (0 is time of abortion) of First Suicide Attempt (using Women without a prior psychiatric contact (n = 13,252) and Women with a prior psychiatric contact (n = 37,216) after a First First-Trimester Abortion Who Had a Previous Abortion (Panel B), and Women Who Did Not Have a Previous Abortion (Panel A)).

Notes: The period -12 to 0 refers to the period from 12 months before the abortion. I indicates 95% confidence intervals.

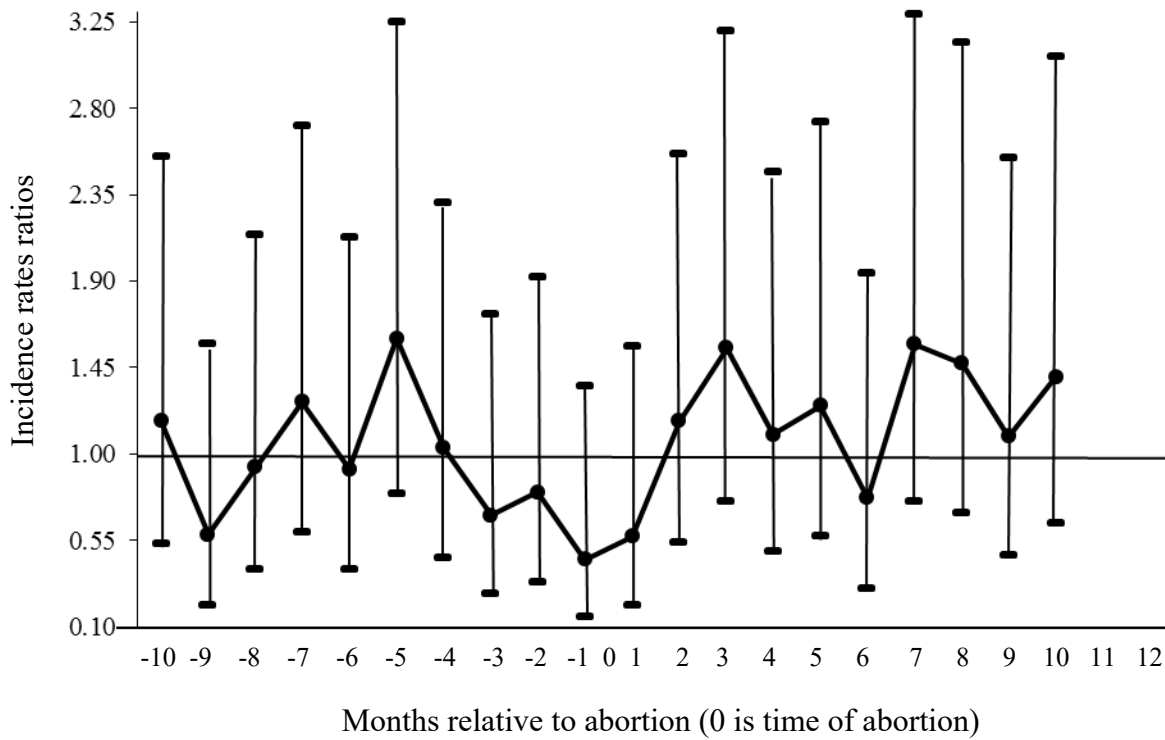
A. All women having had a first first-trimester abortion (n = 50,468)



B. Women having had a first first-trimester abortion with a previous psychiatric admission (n = 13,252)



C. Women having had a first first-trimester abortion without a previous psychiatric admission (n = 37,216)



Notes. The horizontal line indicates the reference group of the 11<sup>th</sup> and 12<sup>th</sup> months before the abortion for each group. Error bars indicate 95% CIs. All numbers in Figure 2 are adjusted for age and cohort.