Article:
Liang, C, Chung, H-F, Dobson, AJ et al. (9 more authors) (2023) Is there a link between infertility, miscarriage, stillbirth, and premature or early menopause? Results from pooled analyses of nine cohort studies. American Journal of Obstetrics and Gynecology, 229 (1). 47.E1-47.E9. ISSN 0002-9378

https://doi.org/10.1016/j.ajog.2023.04.009

Contents

Characteristics

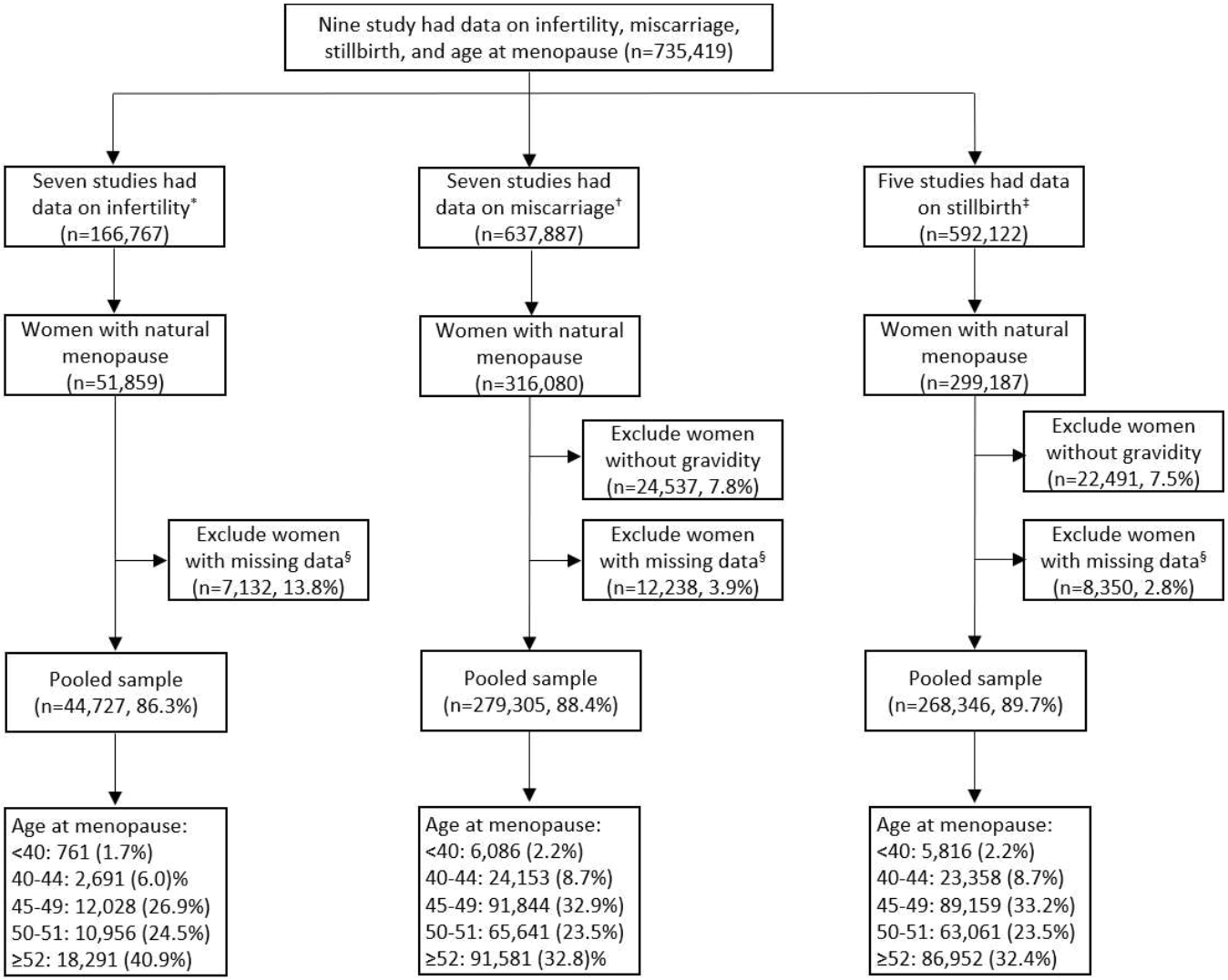
Table S1. Characteristics of nine studies of women having information on infertility, miscarriage, stillbirth, and age at natural menopause in the InterLACE consortium

Study	Country	Study population	Sample size	Postmenopausal women	Baseline year	Age at baseline Median (IQR)
ALSWH-mid	Australia	Women who are Australian citizens or permanent residents and born between 1946 and 1951 were randomly selected from the universal health insurance data base.	13,482	7,628	1996	47.6 (46.3,48.9)
WLH	Sweden	Women aged 29-49 years at baseline and resident in the Uppsala Health Care Region were selected randomly from the Swedish Population Registry.	48,874	11,958	1991-1992	40.0 (35.0,45.0)
NSHD	UK	Females born across England, Scotland and Wales during 1 week in March 1946.	1,782	820	1989	43.0 (43.0,43.0)
NCDS	UK	Females born across England, Scotland and Wales during 1 week in March 1958.	4,846	2,826	1999-2000	42.0 (42.0,42.0)
UKWCS	UK	Women aged 35-69 years living in England, Scotland and Wales ang willing to participate in detailed survey between 1995 and 1998.	32,283	9,265	1995-1998	50.9 (44.7,59.3)

JNHS	Japan	Female registered nurses, licensed practical nurses, public health nurses, and/or midwives, who were at least 30 years old and resident in Japan at the baseline survey. The age limit was reduced to 25 years old in 2005.	48,658	9,428	2001-2007	41.0 (35.0,48.0)
UK Biobank	UK	Women aged 40-69 years who attended one of the 22 centres across the UK between 2006 and 2010 were recruited.	267,241	138,365	2006-2010	57.0 (50.0,63.0)
China Biobank	China	Women aged between 30 and 79 years old at baseline, were identified through official residential records and recruited from 10 geographically defined regions (5 urban and 5 rural) of China.	301,411	147,242	2004-2008	50.9 (42.6,58.8)
Prospect-EPIC	Netherlands	women aged 50–69 years living in the city of Utrecht and vicinity who were scheduled for breast cancer screening between 28th June 1993 and 28th November 1997, were invited to join the Prospect-EPIC study.	16,842	9,934	1993-1997	56.8 (52.1,62.7)

ALSWH-mid: Australian Longitudinal Study on Women's Health 1946-51 cohort; WLH: Women's Lifestyle and Health Study; NSHD: MRC National Survey of Health and Development Study; NCDS: the National Child Development Study; UKWCS: the UK Women's cohort study; JNHS: Japan Nurses' Health Study; Prospect-EPIC: the Utrecht contribution to the European Prospective Investigation into Cancer and Nutrition cohort, the Netherlands; IQR: interquartile range;

Figure S1. Flow chart of sample for analysis of the association between infertility, miscarriage, stillbirth, and age at menopause in the InterLACE consortium



The nine included studies were Australian Longitudinal Study on Women's Health 1946-51 cohort (ALSWH-mid), the Swedish Women's Lifestyle and Health Study (WLH), UK MRC National Survey of Health and Development (NSHD), the National Child Development Study (NCDS), the UK Women's cohort study (UKWCS), Japan Nurses' Health Study (JNHS), UK Biobank, China Kadoorie Biobank, and the Dutch Prospect-EPIC Utrecht in the European Prospective Investigation into Cancer and Nutrition (Prospect-EPIC). [*]. ALSWH-mid, WLH, NSHD, NCDS, UKWCS, JNHS, and Prospect-EPIC. [†]. ALSWH-mid, NSHD, NCDS, UKWCS, UK Biobank, China Biobank, and Prospect-EPIC. [‡]. NSHD, NCDS, UK Biobank, China Biobank, and Prospect-EPIC. [§]. Women with missing value on reproductive histories (i.e., infertility, miscarriage, or stillbirth), age at natural menopause, or covariates (race, education level, age at menarche, body-mass index, and smoking status) were excluded.

Table S2. Ascertainment of exposures and outcomes

Study	Infertility	Miscarriage	Stillbirth	Age at natural menopause
ALSWH-mid (Survey 1-9)	Questionnaire (survey 3): 1.unsuccessfully to get pregnant? (For 12 months or more) 2.diagnosed as infertile 3.treatment for infertility	Questionnaire (survey 1): number of miscarriages	/	Questionnaire (survey 1-6): menopause status and menopause age
WLH (Survey 1-2)	Questionnaire (survey 1-2): 1. have difficulty in becoming pregnant for 1 or more years; 2.treatment of infertility	/	/	Questionnaire (survey 1-2): menopause status and menopause age
NSHD* (Survey 1-7)	Questionnaire (survey 6): 1.consult a doctor or other professional about infertility	Questionnaire (survey 6): number of miscarriages	Questionnaire (survey 6): number of stillbirths	Questionnaire (survey 7-14): menopause status and menopause age
NCDS (Survey 1-9)	Questionnaire (survey 6): 1. unable to have children	Questionnaire (survey 4-8): number of miscarriages, outcome of each pregnancy	Questionnaire (survey 4-8): number of stillbirths, outcome of each pregnancy	Questionnaire (survey 8-9): menopause status and menopause age

Study	Infertility	Miscarriage	Stillbirth	Age at natural menopause
UKWCS (Survey 1-2)	Questionnaire (survey 1): 1. diagnosis of infertility 2. problem related to infertility	Questionnaire (survey 1): history of miscarriage	/	Questionnaire (survey 1-2): menopause status and menopause age
JNHS (Survey 1-6)	Questionnaire (survey 1): 1.have difficulty in becoming pregnant for more than 2 years; 2.treatment of infertility	/	/	Questionnaire: menopause status (survey 1-6) and menopause age (survey 1 and lastest)
UK Biobank (Survey 1-3)	/	Questionnaire (survey 1-3): number of miscarriages	Questionnaire (survey 1-3): number of stillbirths	Questionnaire (survey 1-3): menopause status and menopause age
China Biobank (Survey 1-2)	/	Questionnaire (survey 1-2): number of spontaneous abortions	Questionnaire (survey 1-2): number of still births	Questionnaire (survey 1-2): menopause status and menopause age
Prospect-EPIC (Survey 1-5)	Questionnaire (survey 1): sub/infertility and infertility consult	Questionnaire (survey 1): number of miscarriages	Questionnaire (survey 1): number of stillbirths	Questionnaire (survey 1,4): menopause status and menopause age

ALSWH-mid: Australian Longitudinal Study on Women's Health 1946-51 cohort; WLH: Women's Lifestyle and Health Study; NSHD: MRC National Survey of Health and Development Study; NCDS: the National Child Development Study; UKWCS: the UK Women's cohort study; JNHS: Japan Nurses' Health Study; Prospect-EPIC: the Utrecht contribution to the European Prospective Investigation into Cancer and Nutrition cohort, the Netherlands.

Table S3. Comparison of women's characteristics in complete dataset used for analysis and the dataset with missing data

Characteristics	Infertility		Miscarriage		Stillbirth	
No. (%)	Complete	Missing	Complete	Missing	Complete	Missing
Sample size						
	44,727 (86.25)	7,132 (13.75)	279,305 (95.80)	12,238 (4.20)	268,346 (96.98)	8,350 (3.02)
Race						
Caucasian	35,530 (79.44)	6,434 (90.21)	128,893 (46.15)	11,465 (93.68)	118,164 (44.03)	7,711 (92.35)
Asian	9,074 (20.29)	619 (8.68)	148,055 (53.01)	424 (3.46)	147,917 (55.12)	350 (4.19)
Other	123 (0.28)	79 (1.11)	2,357 (0.84)	349 (2.85)	2,265 (0.84)	289 (3.46)
Education level, years						
≤10	15,710 (35.12)	2,607 (48.67)	200,109 (71.65)	5,836 (55.43)	194,741 (72.57)	4,392 (57.89)
11-12	8,303 (18.56)	882 (16.47)	29,428 (10.54)	1,381 (13.12)	27,958 (10.42)	910 (11.99)
>12	20,714 (46.31)	1,867 (34.86)	49,768 (17.82)	3,312 (31.46)	45,647 (17.01)	2,285 (30.12)
Smoking status						
Past/non-smoker	37,035 (82.80)	4,896 (81.25)	258,237 (92.46)	9,573 (86.73)	248,553 (92.62)	6,706 (87.68)
Current smoker	7,692 (17.20)	1,130 (18.75)	21,068 (7.54)	1,465 (13.27)	19,793 (7.38)	942 (12.32)
Body-mass index, kg/m^2						
<18.5	1,000 (2.24)	109 (2.11)	8,966 (3.21)	119 (1.33)	8,788 (3.27)	65 (1.14)
18.5-24.9	25,965 (58.05)	2,853 (55.30)	105,854 (37.90)	3,985 (44.62)	99,646 (37.13)	2,263 (39.66)
25.0-29.9	13,344 (29.83)	1,515 (29.37)	112,203 (40.17)	3,052 (34.18)	109,081 (40.65)	2,066 (36.21)
≥30.0	4,418 (9.88)	682 (13.22)	52,282 (18.72)	1,774 (19.87)	50,831 (18.94)	1,312 (22.99)
Age at menarche, years						
<11	1,277 (2.86)	177 (3.55)	5,581 (2.00)	352 (4.31)	5,050 (1.88)	205 (3.94)
11-12	14,867 (33.24)	1,666 (33.44)	50,281 (18.00)	2,810 (34.40)	46,528 (17.34)	1,788 (34.33)
13-14	21,761 (48.65)	2,361 (47.39)	89,971 (32.21)	3,644 (44.61)	84,923 (31.65)	2,320 (44.55)
≥15	6,822 (15.25)	778 (15.62)	133,472 (47.79)	1,363 (16.69)	131,845 (49.13)	895 (17.19)
Number of children						
0	5,495 (12.49)	960 (13.95)	5,062 (1.81)	378 (3.11)	4,795 (1.79)	252 (3.02)
1-2	23,225 (52.79)	3,507 (50.97)	154,420 (55.31)	7,733 (63.59)	148,439 (55.32)	5,628 (67.51)

≥3	15,276 (34.72)	2,413 (35.07)	119,690 (42.87)	4,049 (33.30)	115,085 (42.89)	2,456 (29.46)

Body-mass index (kg/m^2) was categorized as <18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women, and as <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women. Distributions between complete dataset and the dataset with missing value were compared using Chi-square test. All the p value were <.001, except the p values for smoking status, age at menarche, and number of children between women included and excluded in the analysis for infertility and age at menopause (p=0.0028 for smoking status; p=0.0247 for age at menarche, and p=0.0009 for number of children).

Sensitivity analysis

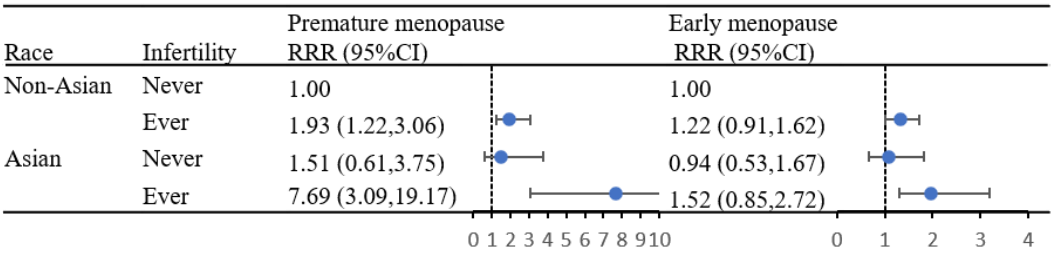
Table S4. Sensitivity analysis for the association between infertility, miscarriage, stillbirth and age at menopause among women with live birth

	Age at menopause, No. (%)					RRR (95%CI)			
	<40	40-<45	45-<50	50-51	≥52	<40	40-<45	45-<50	≥52
History of infertility									
Never	525 (1.48)	2,012 (5.68)	9,248 (26.12)	8,760 (24.74)	14,864 (41.98)	1.00	1.00	1.00	1.00
Ever	75 (2.21)	190 (5.61)	914 (26.97)	782 (23.07)	1,428 (42.14)	2.44 (1.37,4.36)	1.28 (0.98,1.67)	1.15 (1.00,1.32)	1.02 (0.92,1.13)
History of miscarriage									
Never	5,007 (2.20)	19,677 (8.64)	76,678 (33.69)	53,623 (23.56)	72,642 (31.91)	1.00	1.00	1.00	1.00
Ever	936 (2.01)	3,991 (8.57)	13,600 (29.21)	10,802 (23.20)	17,232 (37.01)	1.03 (0.97,1.09)	1.10 (1.06,1.14)	1.01 (1.00,1.01)	1.03 (0.98,1.08)
Number of miscarriages									
0	4,848 (2.17)	19,326 (8.65)	75,549 (33.81)	52,616 (23.55)	71,087 (31.82)	1.00	1.00	1.00	1.00
1	640 (1.91)	2,786 (8.32)	9,855 (29.43)	7,832 (23.39)	12,372 (36.95)	1.00 (0.98,1.02)	1.06 (1.04,1.07)	0.99 (0.99,1.00)	1.03 (0.98,1.08)
2	166 (2.12)	693 (8.86)	2,231 (28.53)	1,765 (22.57)	2,965 (37.92)	1.16 (1.04,1.29)	1.18 (1.06,1.31)	1.02 (0.97,1.07)	1.07 (1.00,1.15)
≥3	83 (2.35)	356 (10.08)	1,031 (29.18)	785 (22.22)	1,278 (36.17)	1.34 (1.10,1.63)	1.39 (1.16,1.67)	1.11 (1.06,1.16)	1.00 (0.93,1.07)
History of stillbirth									
Never	5,237 (2.12)	21,127 (8.54)	82,030 (33.17)	58,132 (23.50)	80,810 (32.67)	1.00	1.00	1.00	1.00
Ever	450 (2.78)	1,770 (10.93)	5,655 (34.91)	3,778 (23.32)	4,546 (28.06)	1.13 (1.10,1.17)	1.14 (1.10,1.19)	0.92 (0.86,0.97)	1.04 (1.01,1.06)
Number of stillbirths									

0	5,237 (2.12)	21,127 (8.54)	82,030 (33.17)	58,132 (23.50)	80,810 (32.67)	1.00	1.00	1.00	1.00
1	309 (2.48)	1,274 (10.23)	4,304 (34.55)	2,960 (23.76)	3,611 (28.99)	1.02 (0.95,1.08)	1.07 (1.01,1.14)	0.91 (0.86,0.96)	1.02 (1.02,1.02)
≥2	141 (3.78)	496 (13.29)	1,349 (36.16)	816 (21.87)	929 (24.90)	1.53 (1.50,1.57)	1.39 (1.34,1.45)	0.95 (0.87,1.04)	1.09 (1.01,1.17)

RRR: relative risk ratio. CI: confidence interval. Women without children were excluded. Infertility: 5,929 women from ALSWH-mid, WLH, NSHD, NCDS, UKWCS, JNHS, and Prospect-EPIC were excluded. Miscarriage: 5,117 women from ALSWH-mid, NSHD, NCDS, UKWCS, UK Biobank, China Biobank, and Prospect-EPIC were excluded. Stillbirth: 4,811 women from NSHD, NCDS, UK Biobank, China Biobank, and Prospect-EPIC were excluded. RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.

Figure S2. Sensitivity analysis for the association of infertility, miscarriage, stillbirth, with premature and early menopause among Asian and non-Asian women with live birth



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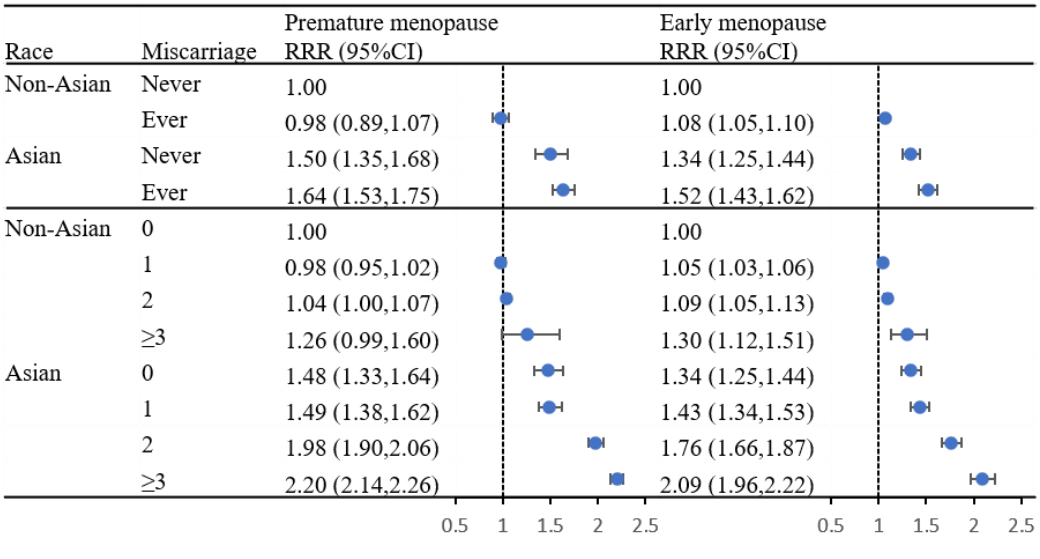
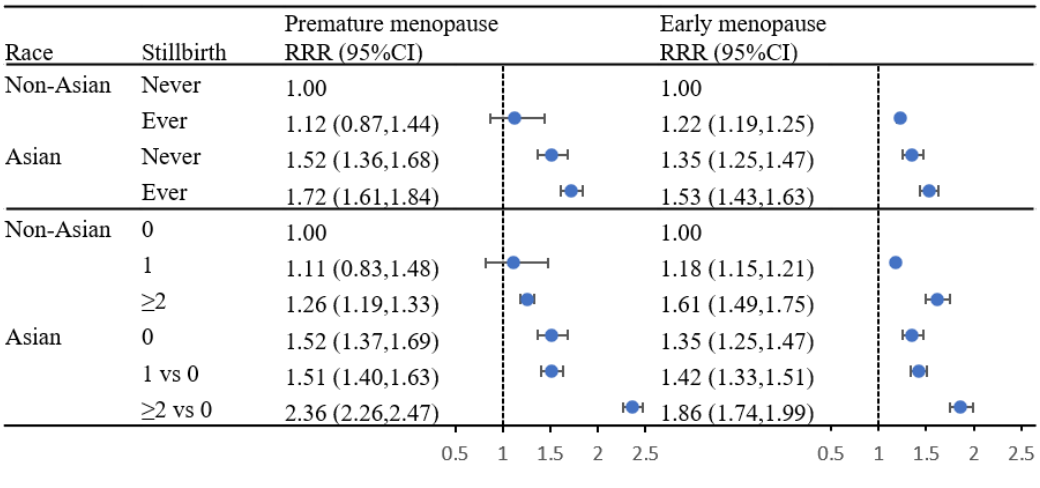


(B)



(C)

(A). 4,555 non-Asian women and 1,374 Asian women were excluded. (B). 4,644 non-Asian women and 473 Asian women were excluded. (C). 4,341 non-Asian women and 470 Asian women were excluded. RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current

smoker). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.

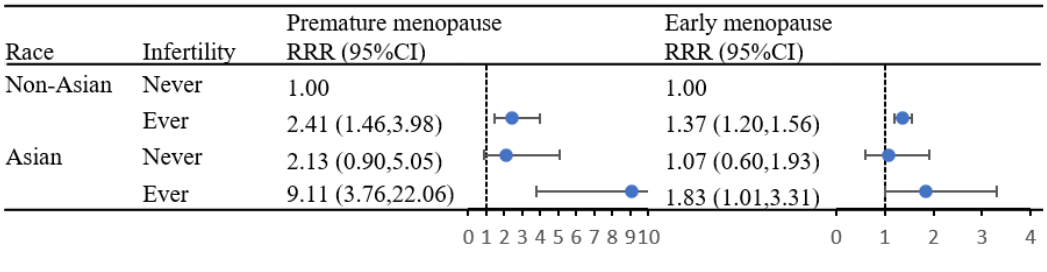
Table S5. Sensitivity analysis for the association between infertility, miscarriage, stillbirth, and age at menopause with additional adjustment of alcohol intake

	Age at menopause, No. (%)					RRR (95%CI)			
	<40	40-<45	45-<50	50-51	≥52	<40	40-<45	45-<50	≥52
History of infertility									
Never	612(1.63)	2,273(6.04)	10,130(26.91)	9,354(24.85)	15,274(40.58)	1.00	1.00	1.00	1.00
Ever	100(2.59)	248(6.41)	1,105(28.58)	897(23.20)	1,517(39.23)	2.76 (1.70,4.49)	1.43 (1.25,1.65)	1.20 (1.07,1.35)	0.99 (0.90,1.10)
History of miscarriage									
Never	5,069(2.20)	19,926(8.66)	77,429(33.65)	54,271(23.58)	73,414(31.90)	1.00	1.00	1.00	1.00
Ever	1,006(2.07)	4,189(8.62)	14,242(29.30)	11,256(23.16)	17,908(36.85)	1.06 (1.02,1.10)	1.11 (1.08,1.14)	1.02 (1.00,1.03)	1.03 (0.98,1.07)
Number of miscarriages									
0	4,914(2.17)	19,580(8.66)	76,306(33.77)	53,273(23.58)	71,896(31.82)	1.00	1.00	1.00	1.00
1	687(1.97)	2,914(8.37)	10,258(29.47)	8,125(23.34)	12,825(36.84)	1.03 (1.01,1.05)	1.07 (1.06,1.07)	1.00 (0.98,1.02)	1.03 (0.98,1.08)
2	175(2.15)	727(8.92)	2,348(28.80)	1,841(22.58)	3,061(37.55)	1.17 (1.06,1.28)	1.18 (1.08,1.29)	1.03 (1.01,1.06)	1.06 (1.00,1.13)
≥3	88(2.32)	380(10.01)	1,116(29.38)	850(22.38)	1,364(35.91)	1.30 (1.07,1.59)	1.37 (1.13,1.65)	1.11 (1.07,1.16)	0.98 (0.93,1.04)
History of stillbirth									
Never	5,345(2.13)	21,528(8.56)	83,290(33.12)	59,149(23.52)	82,158(32.67)	1.00	1.00	1.00	1.00
Ever	466(2.83)	1,804(10.96)	5,741(34.89)	3,832(23.29)	4,613(28.03)	1.14 (1.11,1.18)	1.15 (1.11,1.18)	0.92 (0.87,0.97)	1.04 (1.03,1.05)
Number of stillbirths									
0	5,345(2.13)	21,528(8.56)	83,290(33.12)	59,149(23.52)	82,158(32.67)	1.00	1.00	1.00	1.00

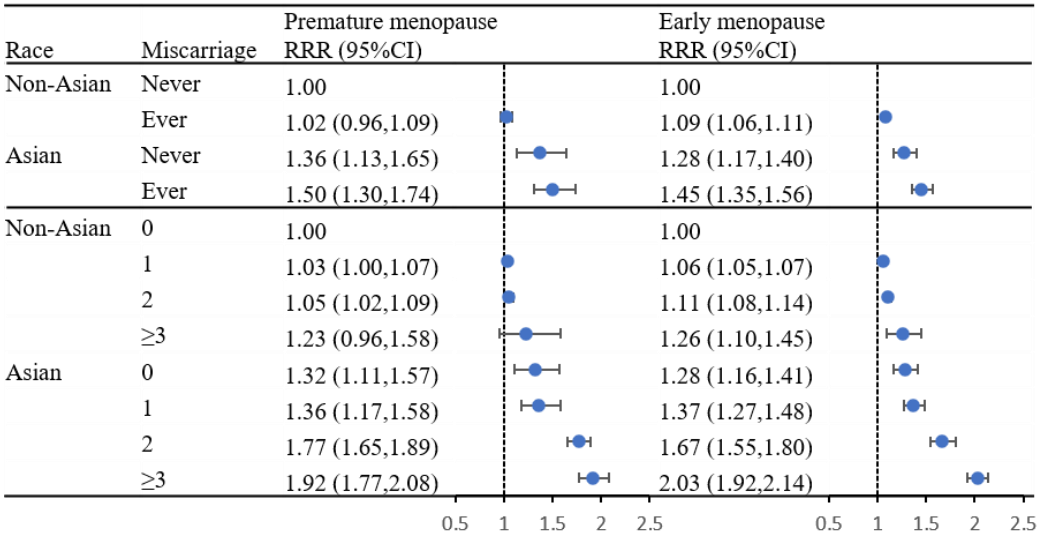
1	322(2.54)	1,303(10.30)	4,370(34.54)	3,001(23.72)	3,657(28.90)	1.03 (0.97,1.10)	1.08 (1.02,1.14)	0.91 (0.87,0.96)	1.02 (1.02,1.03)
≥2	144(3.80)	501(13.21)	1,370(36.11)	829(21.85)	950(25.04)	1.52 (1.51,1.54)	1.39 (1.36,1.42)	0.96 (0.88,1.04)	1.10 (1.03,1.17)

RRR: relative risk ratio. CI: confidence interval. Women without children were excluded. Infertility: 3,217 women from ALSWH-mid, WLH, NSHD, NCDS, UKWCS, JNHS, and Prospect-EPIC were excluded. Miscarriage: 595 women from ALSWH-mid, NSHD, NCDS, UKWCS, UK Biobank, China Biobank, and Prospect-EPIC were excluded. Stillbirth: 420 women from NSHD, NCDS, UK Biobank, China Biobank, and Prospect-EPIC were excluded. RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), smoking status (past/non-smoker and current smoker), and alcohol intake (never, monthly, weekly, and daily). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.

Figure S3. Sensitivity analysis for the association of infertility, miscarriage, stillbirth, with premature and early menopause among Asian and non-Asian women after additional adjustment of alcohol intake



(A)



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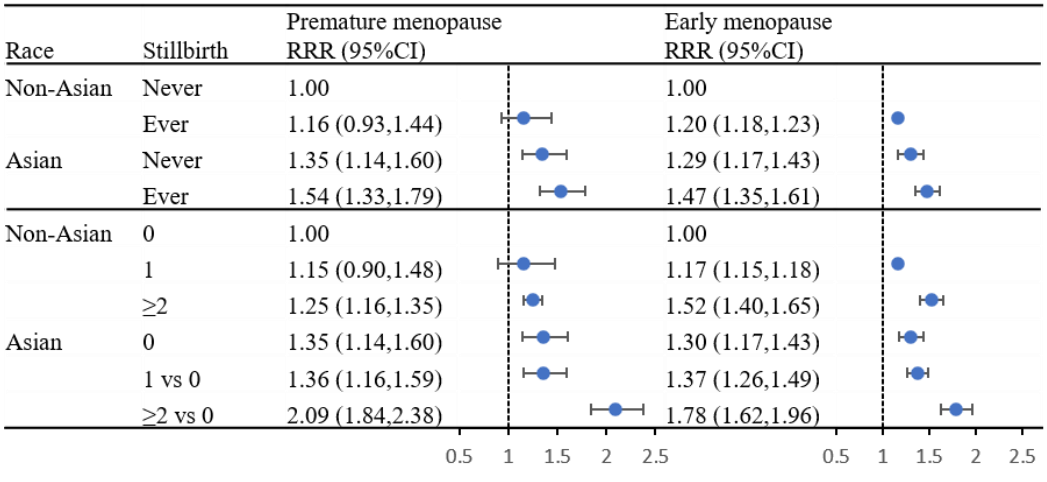

(C)

(A). 2,672 non-Asian women and 545 Asian women were excluded. (B). 592 non-Asian women and 3 Asian women were excluded. (C). 417 non-Asian women and 3 Asian women were excluded. RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), smoking status (past/non-smoker and current smoker), and alcohol

intake (never, monthly, weekly, and daily). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.

Table S6. Association of infertility, miscarriage, and stillbirth with premature and early menopause with younger cut-off points for age at natural menopause among Asian women

RRR (95%CI)		Asian women					
		Cut-off points (A)		Cut-off points (B)		Cut-off points (C)	
		<40	40-44	<39	39-43	<38	38-42
History of infertility	Never	2.20 (1.00,4.86)	1.08 (0.60,1.95)	1.89 (1.01,3.52)	0.61 (0.23,1.64)	2.69 (1.66,4.35)	0.63 (0.17,2.32)
	Ever	9.28 (4.13,20.85)	1.98 (1.09,3.59)	7.17 (3.76,13.66)	1.13 (0.41,3.09)	12.15 (7.51,19.65)	1.03 (0.28,3.83)
History of miscarriage	Never	1.50 (1.34,1.68)	1.37 (1.27,1.47)	1.27 (1.14,1.41)	1.15 (1.06,1.25)	1.46 (1.29,1.66)	1.63 (1.47,1.81)
	Ever	1.65 (1.55,1.77)	1.56 (1.47,1.65)	1.39 (1.32,1.47)	1.39 (1.29,1.50)	1.59 (1.45,1.74)	2.01 (1.81,2.23)
Number of miscarriages	0	1.47 (1.33,1.64)	1.37 (1.27,1.48)	1.25 (1.13,1.37)	1.16 (1.07,1.25)	1.42 (1.30,1.54)	1.67 (1.55,1.79)
	1	1.52 (1.40,1.64)	1.47 (1.38,1.56)	1.31 (1.24,1.39)	1.32 (1.25,1.41)	1.43 (1.36,1.51)	1.95 (1.84,2.07)
	2	1.97 (1.90,2.05)	1.78 (1.68,1.90)	1.60 (1.48,1.73)	1.55 (1.47,1.63)	1.87 (1.79,1.95)	2.17 (2.05,2.30)
	≥3	2.14 (2.09,2.20)	2.17 (2.09,2.25)	1.52 (1.42,1.63)	2.13 (1.99,2.27)	1.91 (1.45,2.52)	3.14 (2.92,3.37)
History of stillbirth	Never	1.51 (1.36,1.67)	1.38 (1.27,1.50)	1.26 (1.16,1.37)	1.19 (1.09,1.29)	1.42 (1.33,1.51)	1.71 (1.60,1.84)
	Ever	1.73 (1.62,1.85)	1.57 (1.48,1.67)	1.52 (1.45,1.59)	1.55 (1.46,1.66)	1.60 (1.53,1.68)	2.53 (2.40,2.67)
Number of stillbirths	0	1.51 (1.36,1.67)	1.38 (1.28,1.50)	1.26 (1.16,1.37)	1.19 (1.10,1.29)	1.42 (1.34,1.51)	1.72 (1.60,1.84)
	1	1.53 (1.41,1.65)	1.46 (1.38,1.55)	1.30 (1.23,1.38)	1.03 (1.34,1.53)	1.42 (1.37,1.48)	1.04 (2.13,2.39)
	≥2	2.36 (2.25,2.47)	1.90 (1.78,2.04)	2.18 (2.13,2.24)	1.91 (1.80,2.04)	2.14 (2.03,2.27)	3.37 (3.23,3.51)

RRR: relative risk ratio. CI: confidence interval. Cut-off points (A): age at natural menopause was classified as <40, 40-44, 45-49, 50-51 (reference), and ≥52. Cut-off points (B): age at natural menopause was classified as <39, 39-43, 44-48, 49-50 (reference), and ≥51. Cut-off points (C): age at natural menopause was classified as <38, 38-42, 43-

47, 48-49 (reference), and ≥50. History of infertility: reference group (non-Asian women without infertility). History and numbers of miscarriages: reference group (non-Asian women without miscarriage). History and number of stillbirths: reference group (non-Asian women without stillbirth). RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.

Table S7. E-values for the estimated Relative Risk Ratios and the lower limit of the 95% confidence intervals

	Premature menopause			Early menopause		
	RRR (95%CI)	E-value for		RRR (95%CI)	E-value for	
		RRR	Lower limit of 95%CI		RRR	Lower limit of 95%CI
History of infertility						
Ever vs never	2.72 (1.77,4.17)	4.87	2.93	1.42 (1.15,1.74)	2.19	1.57
History of miscarriage						
Ever vs never	1.06 (1.01,1.10)	1.30	1.00	1.11 (1.08,1.14)	1.45	1.37
Number of miscarriages						
1 vs 0	1.03 (1.01,1.05)	1.20	1.11	1.06 (1.06,1.07)	1.20	1.11
2 vs 0	1.17 (1.07,1.28)	1.61	1.34	1.18 (1.08,1.29)	1.61	1.34
≥3 vs 0	1.31 (1.08,1.59)	1.95	1.38	1.37 (1.14,1.65)	1.95	1.38
History of stillbirth						
Ever vs never	1.15 (1.11,1.19)	1.57	1.47	1.15 (1.11,1.19)	1.57	1.45
Number of stillbirths						
1 vs 0	1.04 (0.97,1.11)	1.24	1.00	1.08 (1.02,1.15)	1.38	1.15
≥2 vs 0	1.54 (1.52,1.56)	2.45	2.41	1.39 (1.35,1.43)	2.13	2.03

Effect size in single study

Table S8. Association between infertility and age at menopause in each study

		Age at menopause, No. (%)					RRR (95%CI)			
Study	Infertility	<40	40-44	45-49	50-51	≥52	<40	40-44	45-49	≥52
ALSWH-mid	Never	56 (1.19)	255 (5.42)	934 (19.83)	1,098 (23.32)	2,366 (50.24)	1.00	1.00	1.00	1.00
	Ever	9 (1.20)	50 (6.69)	164 (21.95)	156 (20.88)	368 (49.26)	1.20 (0.58,2.50)	1.40 (0.99,1.99)	1.24 (0.98,1.58)	1.09 (0.89,1.34)
WLH	Never	94 (1.03)	453 (4.97)	2,296 (25.17)	2,057 (22.55)	4,223 (46.29)	1.00	1.00	1.00	1.00
	Ever	43 (2.05)	120 (5.72)	547 (26.07)	467 (22.26)	921 (43.90)	1.98 (1.36,2.89)	1.16 (0.93,1.46)	1.03 (0.90,1.18)	0.96 (0.85,1.09)
NSHD	Never	7 (1.57)	22 (4.92)	144 (32.21)	88 (19.69)	186 (41.61)	1.00	1.00	1.00	1.00
	Ever	0 (0.00)	6 (11.11)	17 (31.48)	7 (12.96)	24 (44.44)	-	3.53 (0.95,13.09)	1.52 (0.55,4.18)	1.67 (0.65,4.25)
NCDS	Never	33 (1.92)	126 (7.34)	638 (37.18)	323 (18.82)	596 (34.73)	1.00	1.00	1.00	1.00
	Ever	4 (11.76)	4 (11.76)	13 (38.24)	2 (5.88)	11 (32.35)	18.30 (2.88,116.32)	4.66 (0.80,27.13)	3.13 (0.67,14.72)	2.73 (0.60,12.40)
UKWCS	Never	259 (3.55)	657 (9.00)	2,048 (28.07)	1,744 (23.90)	2,588 (35.47)	1.00	1.00	1.00	1.00
	Ever	14 (13.21)	14 (13.21)	29 (27.36)	15 (14.15)	34 (32.08)	6.19 (2.94,13.04)	2.41 (1.16,5.02)	1.63 (0.87,3.07)	1.52 (0.83,2.80)
JNHS	Never	52 (0.66)	278 (3.54)	2,309 (29.36)	2,427 (30.86)	2,798 (35.58)	1.00	1.00	1.00	1.00
	Ever	30 (2.83)	64 (6.04)	373 (35.22)	304 (28.71)	288 (27.20)	4.37 (2.73,7.00)	1.80 (1.33,2.43)	1.28 (1.09,1.50)	0.83 (0.70,0.99)
Prospect-EPIC	Never	148 (1.60)	624 (6.74)	2,445 (26.42)	2,231 (24.11)	3,807 (41.13)	1.00	1.00	1.00	1.00
	Ever	12 (5.48)	18 (8.22)	71 (32.42)	37 (16.89)	81 (36.99)	4.96 (2.50,9.81)	1.73 (0.98,3.07)	1.75 (1.17,2.63)	1.28 (0.86,1.89)
Overall	Never	649 (1.61)	2,415 (5.98)	10,814 (26.76)	9,968 (24.67)	16,564 (40.99)	1.00	1.00	1.00	1.00
	Ever	112 (2.59)	276 (6.39)	1,214 (28.12)	988 (22.89)	1,727 (40.00)	2.72 (1.77,4.17)	1.42 (1.15,1.74)	1.19 (1.03,1.36)	1.00 (0.91,1.09)

RRRs in single study were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker), when overall RRRs additionally took study variability and within-study correlation into account by including study as a covariate and indicating study as cluster variable.

Table S9. Association between miscarriage and age at menopause in each study

		Age at menopause, No. (%)					RRR (95%CI)			
Study	Miscarriage	<40	40-44	45-49	50-51	≥52	<40	40-44	45-49	≥52
ALSWH-mid	Never	31 (0.99)	167 (5.35)	648 (20.74)	742 (23.75)	1,536 (49.17)	1.00	1.00	1.00	1.00
	Ever	24 (1.37)	104 (5.92)	361 (20.53)	389 (22.13)	880 (50.06)	1.42 (0.82,2.47)	1.17 (0.88,1.54)	1.06 (0.88,1.26)	1.09 (0.94,1.27)
	0	31 (0.99)	167 (5.35)	648 (20.74)	742 (23.75)	1,536 (49.17)	1.00	1.00	1.00	1.00
	1	16 (1.32)	64 (5.29)	234 (19.35)	263 (21.75)	632 (52.27)	1.41 (0.75,2.65)	1.08 (0.78,1.50)	1.02 (0.83,1.26)	1.16 (0.97,1.37)
	2	5 (1.44)	23 (6.61)	78 (22.41)	87 (25.00)	155 (44.54)	1.36 (0.51,3.63)	1.12 (0.69,1.84)	1.01 (0.73,1.40)	0.87 (0.66,1.15)
	≥3	3 (1.49)	17 (8.46)	49 (24.38)	39 (19.40)	93 (46.27)	1.62 (0.46,5.64)	1.77 (0.96,3.25)	1.39 (0.90,2.15)	1.18 (0.80,1.73)
NSHD	Never	5 (1.64)	17 (5.59)	92 (30.26)	50 (16.45)	140 (46.05)	1.00	1.00	1.00	1.00
	Ever	0 (0.00)	4 (3.77)	31 (29.25)	24 (22.64)	47 (44.34)	-	0.47 (0.13,1.76)	0.66 (0.33,1.32)	0.68 (0.35,1.29)
	0	5 (1.64)	17 (5.59)	92 (30.26)	50 (16.45)	140 (46.05)	1.00	1.00	1.00	1.00
	1	0 (0.00)	3 (3.70)	24 (29.63)	20 (24.69)	34 (41.98)	-	0.44 (0.10,1.92)	0.62 (0.29,1.31)	0.61 (0.30,1.25)
	2	0 (0.00)	1 (5.88)	5 (29.41)	4 (23.53)	7 (41.18)	-	0.68 (0.05,8.77)	0.69 (0.16,3.02)	0.53 (0.13,2.19)
	≥3	0 (0.00)	0 (0.00)	2 (25.00)	0 (0.00)	6 (75.00)	0.84 (0.24,2.97)	0.66 (0.22,1.99)	-	-
NCDS	Never	25 (2.19)	76 (6.65)	419 (36.69)	229 (20.05)	393 (34.41)	1.00	1.00	1.00	1.00
	Ever	9 (2.24)	35 (8.73)	148 (36.91)	61 (15.21)	148 (36.91)	1.32 (0.58,3.00)	1.76 (1.07,2.91)	1.33 (0.94,1.89)	1.43 (1.01,2.02)
	0	25 (2.19)	76 (6.65)	419 (36.69)	229 (20.05)	393 (34.41)	1.00	1.00	1.00	1.00
	1	6 (2.31)	20 (7.69)	100 (38.46)	41 (15.77)	93 (35.77)	1.34 (0.50,3.62)	1.56 (0.85,2.89)	1.38 (0.92,2.08)	1.32 (0.87,1.99)

	2	1 (0.96)	10 (9.62)	34 (32.69)	16 (15.38)	43 (41.35)	0.54 (0.07,4.27)	1.76 (0.75,4.14)	1.10 (0.59,2.06)	1.59 (0.86,2.93)
	≥3	2 (5.41)	5 (13.51)	14 (37.84)	4 (10.81)	12 (32.43)	4.27 (0.71,25.62)	3.66 (0.93,14.51)	1.83 (0.57,5.92)	1.94 (0.60,6.22)
UKWCS	Never	161 (3.81)	352 (8.33)	1,141 (26.99)	1,015 (24.01)	1,558 (36.86)	1.00	1.00	1.00	1.00
	Ever	55 (2.98)	167 (9.04)	525 (28.41)	443 (23.97)	658 (35.61)	0.75 (0.54,1.04)	1.07 (0.86,1.32)	1.04 (0.89,1.21)	0.98 (0.84,1.13)
UK Biobank	Never	1,365 (1.59)	6,004 (6.99)	19,572 (22.78)	20,695 (24.09)	38,278 (44.55)	1.00	1.00	1.00	1.00
	Ever	431 (1.64)	1,951 (7.42)	6,078 (23.11)	6,259 (23.80)	11,577 (44.03)	1.05 (0.94,1.17)	1.08 (1.02,1.15)	1.03 (0.99,1.07)	1.00 (0.96,1.03)
	0	1,365 (1.59)	6,004 (6.99)	19,572 (22.78)	20,695 (24.09)	38,278 (44.55)	1.00	1.00	1.00	1.00
	1	308 (1.60)	1,400 (7.28)	4,409 (22.94)	4,604 (23.95)	8,500 (44.22)	1.03 (0.91,1.17)	1.06 (0.99,1.13)	1.02 (0.97,1.06)	1.00 (0.96,1.04)
	2	80 (1.71)	354 (7.58)	1,058 (22.65)	1,090 (23.34)	2,089 (44.72)	1.11 (0.88,1.40)	1.12 (0.99,1.26)	1.02 (0.93,1.11)	1.04 (0.96,1.12)
	≥3	43 (1.79)	197 (8.19)	611 (25.42)	565 (23.50)	988 (41.10)	1.09 (0.80,1.49)	1.18 (1.00,1.39)	1.12 (1.00,1.26)	0.94 (0.85,1.05)
China Biobank	Never	3,399 (2.62)	12,939 (9.98)	54,066 (41.70)	30,114 (23.23)	29,127 (22.47)	1.00	1.00	1.00	1.00
	Ever	454 (2.80)	1,796 (11.08)	6,585 (40.61)	3,619 (22.32)	3,761 (23.19)	1.08 (0.97,1.19)	1.12 (1.06,1.19)	1.00 (0.96,1.05)	1.09 (1.04,1.14)
	0	3,399 (2.62)	12,939 (9.98)	54,066 (41.70)	30,114 (23.23)	29,127 (22.47)	1.00	1.00	1.00	1.00
	1	337 (2.68)	1,335 (10.60)	5,118 (40.65)	2,862 (22.73)	2,939 (23.34)	1.02 (0.90,1.14)	1.06 (0.99,1.14)	0.99 (0.94,1.04)	1.07 (1.02,1.13)
	2	83 (3.14)	317 (12.01)	1,071 (40.57)	552 (20.91)	617 (23.37)	1.28 (1.01,1.61)	1.29 (1.12,1.48)	1.07 (0.96,1.18)	1.17 (1.05,1.32)
	≥3	34 (3.46)	144 (14.63)	396 (40.24)	205 (20.83)	205 (20.83)	1.38 (0.96,2.00)	1.54 (1.25,1.91)	1.06 (0.89,1.25)	1.06 (0.87,1.29)
Prospect-EPIC	Never	94 (1.52)	400 (6.46)	1,618 (26.12)	1,505 (24.30)	2,577 (41.60)	1.00	1.00	1.00	1.00
	Ever	33 (1.55)	141 (6.62)	560 (26.28)	496 (23.28)	901 (42.28)	1.04 (0.69,1.56)	1.07 (0.86,1.32)	1.05 (0.92,1.21)	1.06 (0.93,1.20)
	0	94 (1.52)	400 (6.46)	1,618 (26.12)	1,505 (24.30)	2,577 (41.60)	1.00	1.00	1.00	1.00

	1	20 (1.30)	96 (6.25)	401 (26.09)	356 (23.16)	664 (43.20)	0.89 (0.54,1.46)	1.02 (0.79,1.31)	1.05 (0.90,1.23)	1.09 (0.94,1.25)
	2	6 (1.53)	24 (6.11)	108 (27.48)	97 (24.68)	158 (40.20)	0.98 (0.42,2.29)	0.94 (0.59,1.49)	1.04 (0.78,1.39)	0.94 (0.72,1.22)
	≥3	6 (3.47)	17 (9.83)	46 (26.59)	38 (21.97)	66 (38.15)	2.28 (0.93,5.57)	1.62 (0.91,2.91)	1.12 (0.72,1.74)	1.02 (0.68,1.53)
Overall	Never	5,080 (2.20)	19,955 (8.66)	77,556 (33.64)	54,350 (23.57)	73,609 (31.93)	1.00	1.00	1.00	1.00
	Ever	1,006 (2.06)	4,198 (8.61)	14,288 (29.31)	11,291 (23.16)	17,972 (36.86)	1.06 (1.01,1.10)	1.11 (1.08,1.14)	1.02 (1.00,1.03)	1.03 (0.98,1.07)
	0	4,919 (2.17)	19,603 (8.66)	76,415 (33.76)	53,335 (23.57)	72,051 (31.84)	1.00	1.00	1.00	1.00
	1	687 (1.97)	2,918 (8.36)	10,286 (29.47)	8,146 (23.34)	12,862 (36.85)	1.03 (1.01,1.05)	1.06 (1.06,1.07)	1.00 (0.98,1.02)	1.03 (0.98,1.07)
	2	175 (2.14)	729 (8.92)	2,354 (28.80)	1,846 (22.59)	3,069 (37.55)	1.17 (1.07,1.28)	1.18 (1.08,1.29)	1.03 (1.01,1.06)	1.06 (1.00,1.13)
	≥3	88 (2.31)	380 (9.98)	1,118 (29.37)	851 (22.35)	1,370 (35.99)	1.31 (1.08,1.59)	1.37 (1.14,1.65)	1.12 (1.07,1.16)	0.98 (0.92,1.05)

RRRs in single study were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker), when overall RRRs additionally took study variability and within-study correlation into account by including study as a covariate and indicating study as cluster variable.

Table S10. Association between stillbirth and age at menopause in each study

		Age at menopause, No. (%)					RRR (95%CI)			
Study	Stillbirth	<40	40-44	45-49	50-51	≥52	<40	40-44	45-49	≥52
NSHD	Never	5 (1.45)	17 (4.94)	101 (29.36)	63 (18.31)	158 (45.93)	1.00	1.00	1.00	1.00
	Ever	0 (0.00)	2 (10.53)	9 (47.37)	3 (15.79)	5 (26.32)	-	2.11 (0.25,18.08)	1.67 (0.39,7.25)	0.73 (0.14,3.97)
	0	5 (1.45)	17 (4.94)	101 (29.36)	63 (18.31)	158 (45.93)	1.00	1.00	1.00	1.00
	1	0 (0.00)	2 (11.76)	7 (41.18)	3 (17.65)	5 (29.41)	-	1.94 (0.22,16.93)	1.23 (0.27,5.59)	0.70 (0.13,3.86)
	≥2	0 (0.00)	0 (0.00)	1 (100.00)	0 (0.00)	0 (0.00)	0.91 (0.20,4.18)	1.41 (0.50,3.95)	-	1.00 (0.53,1.87)
NCDS	Never	34 (2.25)	108 (7.13)	559 (36.92)	285 (18.82)	528 (34.87)	1.00	1.00	1.00	1.00
	Ever	0 (0.00)	3 (10.34)	8 (27.59)	5 (17.24)	13 (44.83)	-	1.45 (0.31,6.81)	0.75 (0.23,2.44)	1.36 (0.47,3.93)
	0	34 (2.25)	108 (7.13)	559 (36.92)	285 (18.82)	528 (34.87)	1.00	1.00	1.00	1.00
	1	0 (0.00)	2 (7.41)	8 (29.63)	5 (18.52)	12 (44.44)	-	0.96 (0.06,14.85)	0.75 (0.00,261.06)	1.29 (0.05,36.03)
	≥2	0 (0.00)	1 (50.00)	0 (0.00)	0 (0.00)	1 (50.00)	-	-	0.49 (0.00,170.23)	-
UK Biobank	Never	1,731 (1.59)	7,646 (7.04)	24,810 (22.83)	26,141 (24.06)	48,323 (44.48)	1.00	1.00	1.00	1.00
	Ever	66 (1.83)	306 (8.49)	844 (23.41)	831 (23.04)	1,559 (43.23)	1.07 (0.83,1.38)	1.18 (1.03,1.35)	1.03 (0.93,1.13)	1.03 (0.94,1.12)
	0	1,731 (1.59)	7,646 (7.04)	24,810 (22.83)	26,141 (24.06)	48,323 (44.48)	1.00	1.00	1.00	1.00
	1	55 (1.75)	261 (8.32)	715 (22.79)	728 (23.20)	1,379 (43.95)	1.04 (0.79,1.37)	1.16 (1.00,1.34)	1.00 (0.90,1.11)	1.04 (0.95,1.13)
	≥2	11 (2.35)	45 (9.62)	129 (27.56)	103 (22.01)	180 (38.46)	1.28 (0.68,2.41)	1.32 (0.92,1.87)	1.21 (0.94,1.58)	0.97 (0.76,1.23)
China Biobank	Never	3,464 (2.60)	13,262 (9.95)	55,830 (41.87)	30,806 (23.10)	29,978 (22.48)	1.00	1.00	1.00	1.00

	Ever	389 (3.11)	1,473 (11.77)	4,820 (38.50)	2,926 (23.37)	2,910 (23.25)	1.12 (1.01,1.26)	1.12 (1.05,1.20)	0.89 (0.85,0.93)	1.05 (1.00,1.11)
	0	3,464 (2.60)	13,262 (9.95)	55,830 (41.87)	30,806 (23.10)	29,978 (22.48)	1.00	1.00	1.00	1.00
	1	256 (2.78)	1,018 (11.05)	3,588 (38.96)	2,201 (23.90)	2,146 (23.30)	1.00 (0.87,1.14)	1.04 (0.97,1.13)	0.89 (0.84,0.94)	1.03 (0.96,1.09)
	≥2	133 (4.02)	455 (13.75)	1,232 (37.23)	725 (21.91)	764 (23.09)	1.51 (1.25,1.82)	1.35 (1.20,1.53)	0.91 (0.83,1.00)	1.14 (1.03,1.26)
Prospect-EPIC	Never	116 (1.45)	519 (6.47)	2,107 (26.28)	1,930 (24.07)	3,347 (41.74)	1.00	1.00	1.00	1.00
	Ever	11 (3.59)	22 (7.19)	71 (23.20)	71 (23.20)	131 (42.81)	2.25 (1.16,4.37)	1.08 (0.66,1.77)	0.90 (0.64,1.25)	1.07 (0.80,1.44)
	0	116 (1.45)	519 (6.47)	2,107 (26.28)	1,930 (24.07)	3,347 (41.74)	1.00	1.00	1.00	1.00
	1	11 (3.90)	22 (7.80)	61 (21.63)	68 (24.11)	120 (42.55)	2.36 (1.21,4.58)	1.13 (0.69,1.84)	0.80 (0.57,1.14)	1.02 (0.76,1.39)
	≥2	0 (0.00)	0 (0.00)	9 (60.00)	1 (6.67)	5 (33.33)	-	-	8.08 (1.05,62.20)	2.80 (0.32,24.26)
Overall	Never	5,350 (2.12)	21,552 (8.56)	83,407 (33.12)	59,225 (23.51)	82,334 (32.69)	1.00	1.00	1.00	1.00
	Ever	466 (2.83)	1,806 (10.96)	5,752 (34.91)	3,836 (23.28)	4,618 (28.03)	1.15 (1.11,1.19)	1.15 (1.11,1.19)	0.92 (0.86,0.98)	1.03 (1.02,1.05)
	0	5,350 (2.12)	21,552 (8.56)	83,407 (33.12)	59,225 (23.51)	82,334 (32.69)	1.00	1.00	1.00	1.00
	1	322 (2.54)	1,305 (10.30)	4,379 (34.55)	3,005 (23.71)	3,662 (28.90)	1.04 (0.97,1.11)	1.08 (1.02,1.15)	0.91 (0.86,0.97)	1.02 (1.01,1.02)
	≥2	144 (3.79)	501 (13.20)	1,371 (36.13)	829 (21.84)	950 (25.03)	1.54 (1.52,1.56)	1.39 (1.35,1.43)	0.95 (0.87,1.04)	1.09 (1.01,1.17)

RRRs in single study were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker), when overall RRRs additionally took study variability and within-study correlation into account by including study as a covariate and indicating study as cluster variable.

Table S11. Variance inflation factors in the models assessing the association of infertility, miscarriage, and stillbirth with age at natural menopause

		Variance inflation factors				
	Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5
Exposure	Infertility (ever)	1.02				
	Miscarriage (ever)		1.03			
	Miscarriage=1			1.03		
	Miscarriage=2			1.01		
	Miscarriage≥3			1.01		
	Stillbirth (ever)				1.02	
	Stillbirth=1					1.01
	Stillbirth≥2					1.01
Covariates	Asian	1.47	2.86	2.87	2.89	2.89
	Other	1.00	1.02	1.02	1.02	1.03
	Current smoking	1.01	1.02	1.02	1.02	1.02
	Education (11-12 years)	1.27	1.07	1.07	1.07	1.07
	Education (>12 years)	1.69	1.29	1.29	1.29	1.29
	Menarche age (<11)	1.06	1.09	1.09	1.09	1.09
	Menarche age (13-14)	1.28	1.97	2.00	2.02	2.02
	Menarche age (≥15)	1.26	2.76	2.79	2.81	2.81
	BMI (<18.5 kg/m^2)	1.03	1.07	1.07	1.08	1.08
	BMI (23.0-27.4 or 25.0-29.9 kg/m^2)	1.08	1.25	1.25	1.26	1.26
	BMI (≥27.5 or ≥30.0 kg/m^2)	1.09	1.25	1.26	1.26	1.26
	Alcohol intake (monthly)	2.09	1.46	1.45	1.44	1.44
	Alcohol intake (weekly)	2.00	2.39	2.42	2.45	2.46
	Alcohol intake (daily)	1.98	1.73	1.68	1.69	1.69

BMI: body-mass index (kg/m^2). BMI was categorized as <18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m^2 for Asian women, and as <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women.

Table S12. Sensitivity analysis for the association between number of miscarriages (0, 1, and ≥2) and age at menopause

	Age at menopause, No. (%)					RRR (95%CI)			
	<40	40-<45	45-<50	50-51	≥52	<40	40-<45	45-<50	≥52
Number of miscarriages									
0	4,919(2.17)	19,603(8.66)	76,415(33.76)	53,335(23.57)	72,051(31.84)	1.00	1.00	1.00	1.00
1	687(1.97)	2,918(8.36)	10,286(29.47)	8,146(23.34)	12,862(36.85)	1.03 (1.01,1.05)	1.06 (1.06,1.07)	1.00 (0.98,1.02)	1.03 (0.98,1.07)
≥2	263(2.20)	1,109(9.26)	3,472(28.98)	2,697(22.51)	4,439(37.05)	1.21 (1.09,1.35)	1.24 (1.11,1.39)	1.06 (1.05,1.06)	1.04 (0.98,1.10)

RRR: relative risk ratio. CI: confidence interval. RRRs were adjusted for ethnicity (Caucasian, Asian, and other), education level (≤10, 11-12, and >12), age at menarche (<11, 11-12, 13-14, and ≥15), body-mass index (<18.5, 18.5-22.9, 23.0-27.4, ≥27.5 kg/m for Asian women; <18.5, 18.5-24.9, 25.0-29.9, and ≥30 kg/m^2 for other women), and smoking status (past/non-smoker and current smoker). Study variability and within-study correlation were taken into account by including study as a covariate and indicating study as cluster variable in all models.