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Types of combined oral contraceptives used by U.S. women

Kelli Stidham Hall^{1,*} and James Trussell^{1,2}

¹Office of Population Research, Princeton University, 228 Wallace Hall, Princeton University, Princeton, NJ

²Visiting Professor, The Hull York Medical School, United Kingdom

Abstract

Background—We sought to estimate the prevalence of types of combined oral contraceptives (COC) used among U.S. women.

Study Design—We analyzed interview-collected data from 12,279 women ages 15–44 years participating in the National Survey of Family Growth, 2006–2010. Analyses focused on COC use overall, by pill type, across sociodemographics and health factors.

Results—The prevalence of current COC use (88 different brands) was 17%. The majority of COC-users used earlier formulation COCs: 30 mcg (67%) *versus* <30 mcg estrogen (33%), monophasic (67%) *versus* multiphasic (33%) dosages, and traditional 21/7 (88%) *versus* extended/other cycle regimens (12%) regimens; Norgestimate (32%) and norethindrone (20%) were the most commonly used progestins. Sociodemographic, gynecological and health risk factors were associated with type of COC use.

Conclusion—Further investigation of specific COC use and of the factors associated with types of pills used among U.S. women at the population level is needed.

Keywords

combined oral contraceptives; estrogen dosage; progestin generation; formulation

1. Introduction

The oral contraceptive pill (OC) is among the most favored contraceptive methods, used by 9% of women aged 15–49 years worldwide and by over 18% of reproductive-aged women in developed regions [1]. More U.S. women use COCs than any other method [2,3].

Over the last five decades, COCs have undergone significant developments [3–9]. Lower estrogen doses, modified progestin components, multiphasic formulations, and extended cycle regimens and shortened hormone-free intervals have been attempts to improve safety and tolerability profiles while maintaining efficacy [3–14]. The wide range of COCs

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*Corresponding author: Kelli Stidham Hall¹, (reprint requests), Postdoctoral Research Associate, Office of Population Research, Princeton University, 228 Wallace Hall, Princeton University, Princeton, NJ 08544, (t) 609-258-8087; (f) 609-258-1039; kshall@princeton.edu.

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formulations currently available may have implications for unintended pregnancy and adverse event rates but also for other factors important to modern women's lives such as non-contraceptive health conditions and reproductive health care access (e.g., contraceptive insurance coverage) [5–9,14–18]. However, the types of pills women are using at the population level have not been recently described.

We estimated the prevalence of COC use by type of COC and examined factors associated with type of COC use among women in the United States, 2006 to 2010.

2. Materials and methods

2.1 Study design

We used the most recent data from The National Survey of Family Growth (NSFG), a nationally representative survey conducted periodically by the National Center for Health Statistics since 1973. The population-based survey collects information on family life, marriage and divorce, pregnancy, infertility, use of contraception, and men and women's health. Between 2006 and 2010 (continuous cycle), in-person interviews were conducted in the homes of 22,682 U.S. women and men ages 15 to 44 years. African Americans and Hispanics and adolescents and young adults aged 15 to 24 years were oversampled. The response rate was 77%. Further information about the design and sampling of the NSFG can be found at <http://cdc.gov/nchs/nsfg.htm> [19].

Our sample included all women ages 15 to 44 years (n=12,279). The Institutional Review Board of Princeton University approved this study.

NSFG questions assessed lifetime contraceptive use and the contraceptive method used in the month of the interview. Women who reported OC use in the last month identified their brand of pill from a chart of OCs available in the U.S. (trademarked or registered). If the pill was not on the chart, women were asked to specify the brand or present the actual pill pack.

We focused on COC use. We examined individual pill brands but also categorized COCs by: 1) ethinyl estradiol dosage (20 mcg, 25 mcg, 30 mcg, 35 mcg, or 50 mcg), 2) pill progestin component and the generation of progestin (1st generation = norethindrone and ethynodiol acetate pills; 2nd generation = levonorgestrel and norgestrel; 3rd generation = desogestrel, gestodene and norgestimate; 4th generation = drospirenone and dienogest), 3) monophasic or multiphasic (biphasic or triphasic) dosage; and 3) traditional 21/7 day supply versus extended or continuous cycle and shortened hormone free regimens (84/4, 24/4, 23/5, or 21/2/5 day supplies). Due to small numbers of women reporting the latter regimens, we combined them into a single category of extended/other cycle regimens. The NSFG did not assess off-label use.

2.2 Data analysis

We used descriptive statistics to describe the sample and provide weighted estimates of the proportion of women using COCs overall and by COC type. We provide a population estimate of the overall numbers of women in the United States using COCs based upon 2010 data from the U.S. Census Bureau's estimate of the population of women ages 15–44 years (N=62,374,964) [20]. We also estimate the proportion of women using COCs who are at risk of an unintended pregnancy (sexually active women who are not trying to become pregnant, not pregnant or not sterile [3]).

We use bivariate chi-square tests to compare the proportions of women using COCs across demographic and social groups and reproductive and health characteristics.

We performed multivariable logistic regression to estimate the likelihood of using types of COCs while adjusting for covariates. Covariates were considered for inclusion in regression models if their p-value in bivariate tests was ≤ 0.25 . We present final reduced multivariate regression models in which we retained only those covariates that were significantly associated with the outcome ($p < 0.05$).

We report unweighted frequencies (n) but weighted data were used to account for the complex, stratified sampling design of the survey; weighted proportions (%), chi-square tests and odds ratios (OR) with 95% confidence intervals (CI) were computed using the *svy* series of commands in Stata 11.0 (Stata Corporation, College Station, TX).

3. Results

3.1 Oral contraceptive use

Eighty-eight percent of all women aged 15–44 years ($n=10,779/12,279$) reported ever having used contraception; 73% had used OCs including 20% ($n=2,032$) in the month of the interview. Seventeen percent of all women were COC users ($n=1,900$); 0.4% were progestin-only pill users ($n=57$); 4% did not know ($n=2$) or report ($n=73$) their type of OC. Based upon the estimated 62,374,964 U.S. women ages 15–44 years, the number of current COC users is approximately 10,603,744 U.S. women. Excluding women in the survey who were pregnant ($n=516$), trying to become pregnant ($n=395$), with a history of surgical ($n=1,857$) or non-surgical ($n=203$) sterility, no sexual intercourse experience ($n=1,674$) or intercourse in the last 3 months ($n=2,240$), 25% of all women aged 15–44 at risk of unintended pregnancy were COC users ($n=1,735/7,660$).

3.2 Sociodemographic and health characteristics of oral contraceptive users

We describe characteristics of OC-using women ($n=2,032$) in Table 1. In brief, OC-users were on average 27 ± 7 SD years old, with adolescents and young adults (15–24 years) comprising 42% of the sample and women ages 35 years and older comprising 25%. The majority of OC-using women identified as white race/ethnicity (76%), followed by Hispanic (12%), Black (9%) and other (4%) race/ethnicity. Over half the sample reported any college education (65%) and 13% were still in high school. Nearly half resided in a suburban area (48%), followed by urban (30%) and rural (21%) residences. The majority were employed (76%) but 36% reported incomes below 200% of the federal poverty level. Twenty percent of OC-using women were uninsured at some point during the previous year. Over two-thirds were currently married or cohabitating with a non-marital partner (67%).

For reproductive characteristics of OC users, the average age at menarche was 12.5 years, with 8% of women reporting early age at menarche < 11 years. The majority reported sexual intercourse experience (93%), with 88% reporting sex within the last three months. Less than half reported a history of pregnancy (43%); 38% had given birth to one or more children. Only 1% of OC-using women were 3 months or less postpartum and 1% were breastfeeding. History of gynecological problems was reported by 27% of OC users; these included ovulation problems (18%), ovarian cysts (14%), uterine fibroids (3%) and endometriosis (4%).

For other health-related characteristics of OC users, 1% of women reported a history of non-gestational diabetes and 3% reported gestational diabetes. Nearly a quarter of OC-using women (22%) qualified as overweight with body mass indexes (BMIs) $25\text{--}29.9 \text{ kg/m}^2$ and 22% obese with BMIs $\geq 30 \text{ kg/m}^2$. Tobacco use was reported by 18% of women; 4% smoked a pack of cigarettes per day or more.

3.3 Characteristics of pills used among combined oral contraceptive users

Women reported using 88 different COC brands (Table 2). Among OC users (n=2,032), the five most commonly used COC brands were Ortho-Tricyclen Lo® (11%) followed by Yasmin® (11%), Yaz® (6%), and Ortho Tri-Cyclen® (5%) (Table 2). Use of COCs containing 30 mcg of ethinyl estradiol was more common (n=1,253, 67%) than use of <30 mcg formulations (n=643, 33%); 2% (n=46) used a 50 mcg pill. Forty-one percent of OC-using women used a 3rd generation progestin-containing COC (n=776), 22% used a 1st generation (n=425), 19% used a 2nd generation (n=382) and 17% used a 4th generation (n=317) progestin pill. Norgestimate (32%, n=622) and norethindrone (20%, n=394) were the most commonly used progestins. Two-thirds of OC-using women used monophasic (n=1,255, 67%) *versus* multiphasic (n=645, 33%) COC dosing. Of the multiphasic COC users, the majority used a norgestimate-containing pill (n=494, 78%); half used Ortho Tri-Cyclen® or Ortho Tri-Cyclen Lo® (n=332). The majority of OC users used the traditional 21/7 day regimen pills (n=1,675, 88%); 12% used extended or other cycle regimens (n=225).

3.4 Factors associated with types of combined oral contraceptive use

In unadjusted analyses, proportions of COC use by sociodemographic and reproductive factors varied by pill type characteristic and included age, race/ethnicity, education, marital/cohabitation status, parity, postpartum status, history of gynecological problems, non-gestational diabetes diagnosis, BMI, reason for COC use and type of medical practice where the pill was received.

In multivariable regression models, women aged 35–39 years (OR 1.9, CI 1.2–3.0, p=0.007) and those with a history of non-gestational diabetes (OR 11.0, CI 1.9–64.2, p=0.008) had greater odds of using a 30 mcg (*versus* <30 mcg) pill than younger women and those without a diabetes history. Women with an underweight BMI (OR 0.3, CI 0.1–0.7, p=0.006) had reduced odds of using a 30 mcg dose pill compared to those with a normal weight BMI.

For generation of progestin, women aged 35–39 years (OR 0.5, CI 0.3–0.8, p=0.007), with a history of gynecological problems (OR 0.7, CI 0.5–1.0, p=0.03) and an overweight BMI (OR 0.6, CI 0.4–0.8, p=0.001) had reduced odds of using 3rd or 4th generation progestin-containing pills (*versus* 1st or 2nd generation pills) than women aged 15–24 years, those without gynecological problems and those with normal weight BMIs. Women with a history of gestational diabetes had greater odds of using a 3rd or 4th generation pill (OR 3.8, CI 1.3–10.7, p=0.01).

Parous women (OR 1.7, CI 1.1–2.6, p=0.006 for parity=1 and OR 2.1, CI 1.3–3.3, p=0.002 for parity >1) and women who had received their COCs at a community (OR 1.6, CI 1.1–2.4, p=0.01) or family planning (OR 2.3, CI 1.5–3.6, p<0.001) clinic had greater odds of using multiphasic (*versus* monophasic) pills than nulliparous women and women who had received their COCs at private/HMO/employer-based practices. Women who had a history of non-gestational diabetes (OR 0.1, CI 0.1–0.5, p=0.005) and those using COCs for menstrual regulation (*versus* contraceptive reasons) had reduced odds of using multiphasic COCs (OR 0.6, CI 0.5–0.9, p=0.01).

Finally, women with a high school diploma/GED (OR 0.3, CI 0.1–0.7, p=0.009) had reduced odds of using extended cycle regimen pills (*versus* traditional 21/7 regimens) compared to those with less than a high school education. Women who used their COCs for “other” reasons (*versus* for contraceptive reasons) had greater odds of using an extended/other cycle regimens (OR 2.3, CI 1.1–4.7, p=0.03).

4. Discussion

Our finding on the prevalence of COC use among women in the U.S. is similar to national reports on contraceptive use from 1982 to 2008 [3]. Approximately 17% of our women aged 15–44 years surveyed between 2006 and 2010 were COC users (translating to a population estimate of 10,603,744 women in the United States); 25% of women at risk for an unintended pregnancy used COCs.

Women used 88 different COC brands, reflecting the evolution of available modern contraceptive pills. While data were limited to type of COC use in the month of the interview (and not reflective of pill types previously tried), findings suggest that women are using earlier pill formulations (30 mcg estrogen, 1st and 2nd generation progestins, monophasic dosages and traditional 21/7 regimens) which is a departure from trends in uptake of newer formulations noted in the 1980s [12,21]. Women's positive experiences with COCs they were prescribed at initiation or younger ages may provide incentive for continuation despite availability of newer formulations. Cost may also be a driving force behind this trend, given lower prices and greater insurance coverage of older COCs compared to formulations with 3rd/4th generation progestins and extended or other cycle regimen pills. However, these potential determinants of types of COCs used cannot be determined from these data.

Reasons women did cite for current COC use were inconsistently associated with the types of pills used. Women taking COCs for acne were more likely to be using 3rd generation pills like Ortho Tri-Cyclen® [2,22] but not other FDA acne-approved COCs including Estrostep® (norethindrone-based 1st generation) or Yaz® (drospirinone-based 4th generation). Women using COCs for “other” non-contraceptive reasons were more likely to use extended cycle regimens, which have potential therapeutic effects on endometriosis and dysmenorrhea [7,13], though associations were not noted between pill type and specific endometriosis and gynecological problem reasons. The NSFG does not assess off-label pill use so we likely failed to capture women who are using extended cycle regimens or other pills types for non-contraceptive purposes. Moreover, given that any COC regardless of FDA-approved indication may exhibit therapeutic effects on acne, dysmenorrhea and other conditions, the lack of association found here is not surprising.

Differences in pill types across practice settings may be due to onsite availability of pharmaceutical samples, availability of inexpensive pill brands in clinic-based settings or prescription tailoring around clients' drug prescription coverage [2,15,23]. Ortho-TriCyclen® and its equivalents (the most commonly used OCs) are widely available, commonly covered by prescription drug plans and affordable for clinic-based practices and their clientele [2]. Indeed, prescriber bias due to insurance types and formularies plays an important role in women's use of particular pill types. We analyzed insurance status and other socioeconomic considerations potentially related to access including employment situation and income but these factors were not associated with types of COC used in multivariable models. Further evaluation of the influence of medical setting, provider prescribing patterns, and pharmaceutical access on specific COC use is warranted.

While our analysis has provided some foundation as to women's characteristics related to types of pill use, the significance of cross-sectional associations are not apparent. Limited assessment of health-related factors including cardiovascular risks did not permit adequate examination of COC use among women with hormonal contraindications, and it remains unclear whether newer pill formulations are preferable to older ones in regards to safety [2,5,8,14,24,25–30]. We were unable to assess onset, duration or lifetime use of different COC types, which is pertinent to interpreting potential relationships found here. Finally,

although attempts were made to ensure accurate identification of pill type, OC use measures were self-reported and recall bias is of concern. Examination of prospective and longitudinal data including pharmaceutical, insurance claims or marketing data may help further describe types and patterns of specific OCs used over time.

5. Conclusion

Our findings suggest that women in the United States favor COCs as their contraceptive method, with the majority relying upon pills with earlier hormonal formulations. Factors determining women's use and nonuse of lower dose, newer progestin, multiphasic or extended cycle regimen pills are likely complex and require further investigation for their role in how and why women and health providers choose to initiate or switch to particular pills. Additional prospective research is warranted to determine relationships between COC formulations and adverse events, contraceptive use patterns and unintended pregnancy rates in current contexts and among women with cardiovascular and chronic disease risk factors. Of particular interest will be the impact of socioeconomic and political factors including the forthcoming U.S. health care reform on women's access to and use of specific types of contraception in this country. Despite the high prevalence of OC use in the U.S., long-acting reversible contraceptive methods offer an ideal option for women at risk of pregnancy when cost barriers are removed [31].

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Table 1

Sociodemographic, reproductive and health-related characteristics of the sample

U.S. women ages 15–44 years	All women (n=12,279) %	Oral contraceptive Users (n=2,032) %
Age group		
15–24 years	34	42
25–34 years	32	37
35–39 years	17	14
40 years	17	11
Race/ethnicity		
Hispanic	17	12
White	62	76
Black	15	9
Other	6	4
Education level		
<High school diploma	13	6
High school diploma or GED	21	15
Any college	52	65
Still in high school	14	13
Residence		
Urban	32	30
Suburban	48	48
Rural	20	21
Employment status		
Employed	66	76
Unemployed	5	3
In school	10	10
At home/other	19	11
Poverty level		
<200% federal poverty level	46	36
>200% federal poverty level	54	64
Insurance status		
Fully insured last year	73	80
Uninsured during last year	27	20
Marital/cohabitation status		
Married or cohabitating	53	67
Not married or cohabitating	47	33
Lifetime sexual intercourse experience		
Yes	86	93

U.S. women ages 15–44 years	All women (n=12,279) %	Oral contraceptive Users (n=2,032) %
No	14	7
Sexually active in last 3 months		
Yes	82	88
No	18	12
Age at menarche		
<11 years	8	8
11–14 years	82	82
>14 years	10	10
Parity		
0 childbirths	45	62
1 childbirths	16	17
>1 childbirths	39	21
Postpartum 3 months		
Yes	2	1
No	98	99
Breastfeeding status		
Currently breastfeeding	2	1
Not breastfeeding	98	99
History of gynecological problems ^a		
Yes	29	27
No	71	73
History of ovarian cysts		
Yes	16	14
No	84	86
Gestational diabetes diagnosis		
Yes	4	3
No	96	97
Non-gestational diabetes diagnosis		
Yes	2	1
No	98	99
Body mass index		
Underweight BMI <18.5	3	3
Normal weight BMI 18.5–24.9	46	53
Overweight BMI 25–29.9	23	22
Obese BMI ≥30	28	22
History of smoking in last year		

U.S. women ages 15–44 years	All women (n=12,279) %	Oral contraceptive Users (n=2,032) %
None	74	82
< pack of cigarettes per day	18	15
pack of cigarettes per day	8	4

^aGynecological problems may include ovulation problems, ovarian cysts, uterine fibroids or endometriosis. Results are presented as weighted percentages (%) of sociodemographic characteristics among all women and among oral contraceptive users.

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Table 2
 Combined oral contraceptive use by brand among women ages 15–44 years in the United States

	Progestin component	Ethinyl estradiol dose (mcg)	Monophasic (M) vs multiphasic (Ph) dosing	Day supply	n (n=2,032)	% of all OC users
Combined oral contraceptives					1900	94
Ortho Tri-Cyclen Lo®	norgestimate	25	Ph	21/7	233	11
Yasmin®	drospirenone	30	M	21/7	205	11
Yaz®	drospirenone	20	M	24/4	107	6
Ortho Tri-Cyclen®	noregestimate	35	Ph	21/7	99	5
Tri-Sprintec®	noregestimate	35	Ph	21/7	87	5
Loestrin FE 1/20®	noreth acetate ^a	20	M	21/7	90	4
Trinessa®	noregestimate	35	Ph	21/7	73	3
Ortho-Cyclen®	noregestimate	35	M	21/7	63	3
Microgestin 1.5/30®	noreth acetate ^a	30	M	21/7	59	3
Aviane®	levonorgestrel	20	M	21/7	56	2
Lutera™	levonorgestrel	20	M	21/7	48	2
Seasonale®	levonorgestrel	30	M	84/7	47	2
Apri®	desogestrel	30	M	21/7	46	3
Sprintec®	norgestimate	35	M	21/7	44	2
Lo/Ovral®	norgestrel	30	M	21/7	37	2
Kariva®	desogestrel	20	M	23/5	32	2
Eastrostep FE®	noreth acetate ^a	20–35	Ph	21/7	32	1
Necon 1/35®	norethindrone	35	M	21/7	31	2
Levora®	levonorgestrel	30	M	21/7	29	2
Trivora®	levonorgestrel	30–40	Ph	21/7	28	1
Ortho-Novum 7/7/7®	norethindrone	35	Ph	21/7	25	1
Ortho-Novum 1/35®	norethindrone	35	M	21/7	23	1
Alesse®	levonorgestrel	20	M	21/7	21	1
Desogestrel®	desogestrel	30	M	21/7	21	1

Combined oral contraceptives	Progestin component	Ethinyl estradiol dose (mcg)	Monophasic (M) vs multiphasic (Ph) dosing	Day supply	n (n=2,032)	% of all OC users
Ortho-Cept®	desogestrel	30	M	21/7	21	94
Monessa®	norgestimate	35	M	21/7	20	1
Seasonique®	levonorgestrel	30	M	84/7	18	0.7
Zovia 1/50®	ethy diacetate ^b	50	M	21/7	16	0.5
Junel FE 20™	norethindrone	20	M	21/7	15	1
Loestrin 21 1.5/30®	noreth acetate ^a	30	M	21/7	15	0.6
Mircette®	desogestrel	20	M	21/2/5	13	0.6
Cryselle®	norgestrel	30	M	21/7	12	1
Ovcon 35®	norethindrone	35	M	21/7	12	0.5
Levlen®	levonorgestrel	30	M	21/7	11	0.5
Nortrel 28®	norethindrone	35	M	21/7	11	0.5
Ogestrel®	norgestrel	50	M	21/7	11	0.4
Triphasil®	levonorgestrel	30-40	Ph	21/7	10	0.5
Tri-Levlen®	levonorgestrel	30-40	Ph	21/7	10	0.4
Necon 7/7/7®	norethindrone	35	Ph	21/7	9	0.7
Low-Ogestel®	norgestrel	30	M	21/7	9	0.6
Cyclessa®	desogestrel	25	Ph	21/7	9	0.4
Enpresse®	levonorgestrel	30-40	Ph	21/7	9	0.4
Portia®	levonorgestrel	30	M	21/7	9	0.4
Nortrel 7/7/7®	norethindrone	35	Ph	21/7	7	0.5
Femcon FE™	norethindrone	35	M	21/7	7	0.2
Ortho-Novum 1/50®	norethindrone	50 ^c	M	21/7	6	0.2
Zovia 1/35E®	ethy diacetate ^b	35	M	21/7	6	0.2
Nordette®	levonorgestrel	30	M	21/7	5	0.6
Norethin 1/35E	norethindrone	35	M	21/7	5	0.3
Loestrin 24FE®	noreth acetate ^a	20	M	24/4	5	0.2

Combined oral contraceptives	Progestin component	Ethinyl estradiol dose (mcg)	Monophasic (M) vs multiphasic (Ph) dosing	Day supply	n (n=2,032)	% of all OC users
Jenest [®]	norethindrone	35	Ph	21/7	5	0.1
Ocella [™]	drospirenone	30	M	21/7	4	0.3
Levite [™]	levonorgestrel	20	M	21/7	4	0.2
Nortrel 0.5/0.035 [®]	norethindrone	35	M	21/7	4	0.2
Ovcon 50 [®]	norethindrone	50	M	21/7	4	0.2
Reclipsen [™]	desogestrel	30	M	21/7	4	0.1
Necon 1/50 [®]	norethindrone	50 ^c	M	21/7	4	0.0006
Demulen 1/35 [®]	ethy diacetate ^b	35	M	21/7	3	0.3
Modicon [®]	norethindrone	35	M	21/7	3	0.3
Ortho-Novum [®]	norethindrone	NS	M	21/7	3	0.3
Ortho-Novum 10/11 [®]	norethindrone	35	Ph	21/7	3	0.2
Kelnor [™]	ethy diacetate ^b	35	M	21/7	3	0.2
Velivet [™]	desogestrel	25	Ph	21/7	3	0.0009
Jolesse [™]	levonorgestrel	30	M	84/7	2	0.3
Demulen 1/50 [®]	ethy diacetate ^b	50	M	21/7	2	0.2
Junel 30 [™]	norethindrone	30	M	21/7	2	0.2
Tri-Previfem [™]	norgestimate	35	Ph	21/7	2	0.2
Junel FE 30 [™]	norethindrone	30	M	21/7	2	0.2
Norinyl 1+35 [®]	norethindrone	35	M	21/7	2	0.0007
Ovral [®]	norgestrel	50	M	21/7	2	0.0006
Nortrel [®]	norethindrone	35	M	21	2	0.0006
Lessina [®]	levonorgestrel	20	M	21/7	2	0.0004
Zenchant [®]	norethindrone	35	M	21/7	2	0.0004
Zovia [®]	ethy diacetate ^b	NS	M	21/7	1	0.0005
Microgestin FE 1/20 [®]	noreth acetate ^a	20	M	21/7	1	0.0003
Previfem [™]	norgestimate	35	M	21/7	1	0.0002

Combined oral contraceptives	Progestin component	Ethinyl estradiol dose (mcg)	Monophasic (M) vs multiphasic (Ph) dosing	Day supply	n (n=2,032)	% of all OC users
Necon 10/11 [®]	norethindrone	35	Ph	21/7	1	0.0002
Norinyl 1/50 [®]	norethindrone	50 ^c	M	21/7	1	0.0002
Junel 20 [™]	norethindrone	20	M	21/7	1	0.0001
Balziva [™]	norethindrone	35	M	21 or 21/7	1	0.00009
Azurette [™]	desogestrel	20	M	21/7	1	0.00007
Mercilon [®]	desogestrel	20	M	23/5	1	0.00007
Products not available in U.S.						
Miranova ^e	levonorgestrel	20	M	21/7	1	0.001
Nueva Perla (minulet)	gestodene	30	M	21/7	2	0.0006
Microgynon ^e	levonorgestrel	30	M	21/7	1	0.0003
Valette	dienogest	30	M	21/7	1	0.0003
Nociclin ^e	norethindrone	30	M	21/7	1	0.0001
Gynera	gestodene	30	M	21/7	1	0.00003

Results are presented as frequencies (n) and weighted percentages (%) of women using each brand of combined oral contraceptive (COC) among all oral contraceptive (OC) users (n=2,032).

^aNorethindrone acetate.

^bEthinodiol diacetate abbreviated as ethynodiol.

^cEstrogen component is mestranol.

^dSpecific pill/dosage not specified (NS).

^eEquivalent formulations available in the United States.