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Physiologic and psychologic symptoms associated with use of injectable contraception and 20 µg oral contraceptive pills

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Abstract

Objective—To compare menstrual, physiologic, and psychologic symptoms over 2 years among women initiating use of depot medroxyprogesterone acetate or an oral contraceptive pill with a reduced pill-free interval, and those not using hormonal contraception.

Methods—A total of 608 women reported their experience regarding 17 symptoms prior to initiating contraception and every 6 months thereafter for 24 months. Longitudinal relationships between symptoms and contraceptives were assessed after adjusting for age, visits, and baseline status of symptoms.

Results—Oral contraceptive pills were protective against mastalgia (OR = 0.7), cramping (OR = 0.5), hair loss (OR = 0.6), acne (OR = 0.4), nervousness (OR = 0.5), and mood swings (OR = 0.7). DMPA was protective against bloating (OR = 0.5) and mood swings (OR = 0.7), but caused weight gain (OR = 2.3), bleeding episodes >20 days (OR = 13.4), and missed periods (OR = 96.9). Both methods caused intermenstrual bleeding.

Conclusion—Evidence-based data regarding beneficial and adverse symptoms associated with these methods may help clinicians counsel patients appropriately prior to contraceptive initiation.

Keywords

birth control; contraception; DMPA; 20 microgram oral contraceptive pills

INTRODUCTION

Many studies have investigated the beneficial and adverse effects of injectable and oral contraceptives. In particular, symptoms reported by women using depot medroxyprogesterone acetate (DMPA) include abnormal bleeding, dysmenorrhea, hair loss, hirsutism, nausea, acne, headaches, mood changes, decreased libido, fatigue, breast discomfort, and bloating.^{1–10} Similarly, use of oral contraceptive pills (OCPs), even those containing a minimum amount of estrogen, has been associated with adverse effects. For example, symptoms reported by women using OCPs containing 20 µg ethinyl estradiol include abnormal bleeding, mastalgia, dysmenorrhea, hair loss, acne, headaches, mood changes, nausea, bloating, nervousness, and reduced libido.^{11–15}

An examination of these studies, however, reveals that almost all have methodologic limitations that make their findings difficult to interpret. For example, a number of

investigations on both DMPA^{1,3,4,7,16,17} and 20 µg OCPs^{12,13,18–22} failed to measure symptoms at baseline. Since many of these symptoms are common in the absence of contraceptive use, it is not possible to determine without baseline data whether reported symptoms resulted from use of these methods. In addition, many studies failed to include a comparison group of women not using hormonal contraception. Lack of a comparison group makes it difficult to determine if reported changes resulted from contraceptive use or merely from participation in a research study.^{1,3,4,7,12,13,16–22} Finally, many of the studies had follow-up intervals of 6 months, even though these methods often are used for an extended period.^{6,15,18,21–27}

This study fills these gaps in the literature by comparing subjective symptoms reported at baseline and every 6 months for 2 years by women using DMPA or very low dose OCPs with women not using hormonal contraception.

METHODS

We recruited 805 non-Hispanic black, non-Hispanic white, and Hispanic women between 16 and 33 years of age between October 9, 2001, and September 14, 2004, to participate in a prospective cohort study on bone mineral density. Recruitment was conducted to achieve a sample that was balanced by age group (16–24 years and 25–33 years) and contraceptive method. All women underwent eligibility screening including a medical interview, anthropometry, and fasting phlebotomy during the follicular phase of their menstrual cycle. Criteria for exclusion included current pregnancy or breastfeeding; pregnancy planned within the next 3 years; use of DMPA within the past 6 months; use of OCPs within the past 3 months; current use of hormonal intrauterine device; contraindication to hormonal contraception; lack of menses for >3 months within the past year; bilateral oophorectomy; use of over-the-counter phytoestrogens (eg, Estroven, Promensil); dietary isoflavone intake exceeding 84 mg per day; illness or medication known to affect BMD; and eating disorder or strict vegetarian diet.

Of the 805 women who signed a consent form for the larger study, 197 women were excluded from these analyses because the baseline symptom checklist was not completed ($n = 95$), they failed additional screening tests ($n = 92$), or the data and safety monitoring board (DSMB) removed them from the study due to a T score -2.5 ($n = 5$) (Figure 1). Women who were excluded from analysis ($n = 197$) did not differ from women included in the analyses ($n = 608$) on age, marital status, parity, education, or income (all $P > .05$).

Written, informed consent was obtained from all participants; parental consent was obtained for participants <18 years of age. Following counseling, women were allowed to select one of three types of birth control: DMPA, an OCP containing 0.15 mg desogestrel and 20 µg ethinyl estradiol (taken for 21 days, followed by 2 days of placebo and 5 days of 10 µg ethinyl estradiol),¹² or nonhormonal contraception (abstinence, bilateral tubal ligation, or condoms). All participants received free well-woman care and contraception during the study and were compensated for their time and travel. Those who did not return for scheduled visits were reminded by phone calls, and followed by certified letters as needed. All procedures were approved by the Institutional Review Board at the University of Texas Medical Branch at Galveston.

Information obtained at baseline included age, race/ethnicity, education, income, marital status, and parity. Participants also completed a symptom checklist and standardized behavioral measures at baseline and every 6 months thereafter for 24 months. The symptom checklist addressed menstrual, physiologic, and psychologic symptoms for which women responded either “yes” to indicate they had experienced the symptom in the past three

months or “no” if not. Menstrual symptoms were bleeding >20 days, intermenstrual bleeding, missed periods, and cramping; physiologic symptoms were breast tenderness (mastalgia), bloating, acne, hair loss from the head/scalp, facial hair growth (hirsutism), weight gain, and headaches; and psychologic symptoms included nervousness, depressive symptoms, mood swings, loss of energy, pain during intercourse (dyspareunia), and loss of libido. Additional measures included the Beck Depression Inventory (BDI-II),²⁸ the Zung Anxiety instrument,²⁹ and the Positive and Negative Affect Scale (PANAS).³⁰ Each of these scales is widely published, psychometrically sound, and appropriate for use among reproductive-aged women.^{30–32}

Statistical analyses

Univariate comparisons between contraceptive method and sociodemographic variables were performed using the chi-square test. We studied the longitudinal relationship between contraceptive methods and symptoms by using the generalized estimating equation (GEE) procedure.³³ This method can be considered as a linear regression technique, which takes into account that the same subjects are measured over a period of time. The model allowed us to obtain odds ratios (OR) for the various predictors while adjusting for the estimated errors for the repeated measurements. The primary outcome was symptom reporting (yes or no) measured every 6 months over 24 months. An autoregressive working correlation was assumed since symptoms observed on one visit were likely to be correlated with those on the next visit. We examined the association between contraceptive method and symptoms, after controlling for race/ethnicity, age, follow-up visit, and baseline status of the symptoms. Separate GEE models were used for each symptom. Longitudinal analyses were performed and compared on the total sample (n = 608) as well as a subsample (n = 253) of women who completed all 24 months of the study. We also computed the resolution and new development of symptoms at each follow-up visit by contraceptive method, and compared them using chi square or Fisher’s exact test as appropriate. All analyses were performed using SPSS 15.0 (SPSS, Inc., Chicago, IL) or STATA 9 (Stata Corporation, College Station, TX).

RESULTS

Data on symptoms were available for a total of 608 women, of whom 218 selected OCP, 219 DMPA, and 171 nonhormonal contraception (NH group). The three groups did not differ at baseline with regard to race/ethnicity, age, or income, but did differ regarding marital status, education, and parity (Table 1).

Relative to those not using hormonal contraception, women using OCPs experienced less mastalgia, cramping, hair loss, acne, nervousness, and mood swings, but were more likely to report intermenstrual bleeding (Table 2). Women using DMPA had a decreased risk of bloating, cramping, and mood swings, but an increased risk of bleeding >20 days, intermenstrual bleeding, missed periods, weight gain, loss of energy, and loss of libido. GEE analysis among study completers differed from the entire sample only for mood swings, where the protective effect of DMPA and OCPs was not observed. The percentage of women reporting each symptom by visit and contraceptive method for those women who completed all 24 months of the study (n = 253) is shown in Figures 2–4. These figures demonstrate that the observed differences in libido and energy between DMPA users and the NH group were not due to an increase in symptom reporting among DMPA users but rather were due to a decrease among women in the NH group (Figure 4).

Regarding the psychologic measures administered, the BDI total score was 1.4 units lower, indicating fewer depressive symptoms among DMPA users than the NH group at 24 months ($P < .05$). In addition, positive affect scores were lower (1.2 units) among DMPA users

compared to the NH group ($P < .05$). No differences were observed between contraceptive groups in the negative affect scores or on the Zung Anxiety Scale over the 24-month study period.

Resolution and new development of symptoms

Data regarding resolution and new development of symptoms by contraceptive method and visit are shown in Tables 3–5 for the 253 women who completed all 24 months of the study. Comparisons were made on symptom resolution and new development between OCP users vs. the NH group and DMPA users vs. the NH group, with statistical significance denoted by an asterisk. At 6 and 18 months, OCP users were more likely to experience intermenstrual bleeding than NH users. After 6 months of use, DMPA users were more likely to report bleeding >20 days, intermenstrual bleeding, missed periods, weight gain, and hirsutism. However, increased bleeding experienced by DMPA users as compared to women in the NH group was more likely to resolve over time (Table 3). The frequency of patients reporting resolution of cramping and acne was higher at 6 months in the OCP group than in the NH group while DMPA users were more likely to report resolution of bloating (Tables 3 and 4). DMPA users also were more likely than NH users to report resolution of mastalgia at 24 months. In contrast, DMPA users who reported depressive symptoms, loss of libido, and loss of energy at baseline were less likely than women in the NH group to report resolution of these symptoms at 6 months (Table 5).

Comparisons were also made for the entire sample ($n = 608$), accounting for attrition at each time point by method; no significant differences were observed when these findings were compared with those of women who completed all 24 months of the study (data not shown).

Symptoms associated with study discontinuation

Although there were no notable differences in symptom resolution or development between those who did and did not stay in the study for 24 months, certain symptoms at a particular follow-up visit were significantly associated with loss to follow-up ($n = 183$) or seeking a different contraceptive method (switching) ($n = 76$) at the next visit. For instance, OCP users who reported nervousness, loss of energy, or depressive symptoms at the 6-month visit, and DMPA users who reported weight gain at the same visit were more likely to be lost to follow-up at the following visit compared to those not reporting these symptoms. Also, OCP users who reported intermenstrual bleeding at the 12-month visit and DMPA users who reported bleeding >20 days, acne, or loss of scalp hair at 12 months or bloating at 18 months were more likely to switch their method at the following visit. Finally, among women in the NH group, loss of energy at 6 months was associated with loss to follow-up at the following visit, but those reporting weight gain at 18 months were less likely to drop out at 24 months.

DISCUSSION

To our knowledge, this is the first study to examine a large number of subjective symptoms reported by women using DMPA or 20 μg OCPs over a 2-year interval that includes baseline data and a comparison group of women who were not using hormonal contraception. Overall, we observed a number of beneficial effects resulting from hormonal contraceptive use.

One of the most marked beneficial effects of the OCP we studied was on acne, which resolved within 6 months in 70% (28/40) of users who reported it at baseline. This observation compares favorably with those of earlier studies on other OCP formulations, which have demonstrated an improvement in 50 to 90% of patients after 6–9 months of OCP use.^{34–40} However, most of these studies assessed women for only six cycles of OCP use,

and thus could not demonstrate changes after this interval.³⁴ Our findings contribute new information regarding sustained effect over a longer period of time. We also demonstrated that further improvement from OCP use does not occur after 6 months. Therefore, referral to a dermatologist may be appropriate if no improvement occurs within this amount of time.

Another beneficial effect of pills was a decrease in breast tenderness. Prior studies have demonstrated that OCP use reduces the risk of benign breast disease, including chronic cystic disease.⁴¹ It has been suggested that this is due to an inhibition of breast cell proliferation.⁴² One study demonstrated that fibrocystic changes significantly decreased after 2 years of OCP use.⁴¹ This is similar to our observation that a beneficial effect was not observed until 18 months of OCP use.

We did not observe an increase in depressive symptoms among users of either OCPs or DMPA. Although significant differences were noted in BDI and PANAS scores between methods, they were too small to be clinically meaningful. In addition, DMPA and OCP users were less likely to report mood swings than women in the NH group. These findings agree with the majority of published studies on the psychologic effects of these methods.^{43,44} For example, in a study of 3,677 first-time OCP users, 71% of women who reported depressive symptoms at baseline showed improvement within 3 months.²³ In addition, recent studies on OCPs containing drospirenone have shown a significant reduction in negative affect scores and mood symptom scores after 6 months of treatment.^{45–48} Even though other recent studies have demonstrated that injectable contraception and OCPs do not adversely affect mood, many physicians still consider depression and anxiety to be side effects of hormonal contraception. In fact, a recently published survey of 321 health professionals in the United Kingdom found that 77% believed that DMPA caused mood changes and 87% stated that OCPs could cause this.⁴⁹ This report illustrates the importance of disseminating up-to-date and evidence-based information on side effects related to hormonal contraception, which providers can then relay to their patients.

The most common adverse effects associated with both hormonal methods were related to menstrual bleeding. However, intermenstrual bleeding and bleeding >20 consecutive days associated with DMPA during the first 6 months resolved by 12 months of use 65% (15/23) and 85% (11/13) of the time, respectively. This is consistent with the findings of a U.S. survey of 536 DMPA users in which irregular bleeding and longer menses were noted to significantly decrease after 9 months of use.¹ Thus, providers should counsel women considering this method that intermenstrual bleeding or prolonged bleeding almost always resolves within the first year.

In contrast, intermenstrual bleeding was reported at 18 months more frequently by OCP users than women in the NH group. This may have been due, in part, to the fact that the OCP under study contained only 20 µg ethinyl estradiol, which may cause more intermenstrual bleeding than higher-dose OCPs.^{50,51} Furthermore, intermenstrual bleeding may have occurred if participants missed pills or took them later than scheduled.^{52,53} Finally, infection with *Chlamydia trachomatis* has also been shown to increase intermenstrual spotting in OCP users.⁵⁴

Consistent with prior studies,^{1,55,56} we observed that DMPA users were also more likely than women in the NH group to report missing periods. Recent studies suggest that fewer periods may be perceived by many women as a benefit of this method. For example, a survey of European women between 16 and 45 years of age showed that one-third preferred a method that resulted in amenorrhea.⁵⁷ Our finding that experiencing amenorrhea did not lead to discontinuation among women using DMPA supports this. In contrast, OCP users who missed periods were more likely to discontinue the study. This difference in acceptance

of amenorrhea may have resulted from a difference in patient expectations if those who used DMPA expected to miss periods while those who used OCPs expected to have menses. When no flow occurred, this could have led to anxiety regarding a possible pregnancy among OCP users. Since this method also may result in missed periods, to increase contraceptive adherence and continuation, providers should counsel patients about this possible side effect when prescribing OCPs. Those who have concerns regarding pregnancy should be encouraged to seek pregnancy testing to ease their anxiety.

When symptoms were examined over time, it was noted that DMPA users were more likely than women in the NH group to report onset of facial hair growth at 6 months (6% vs 1% respectively). The incidence of hirsutism we observed was greater than that reported among DMPA users in a prior study of 536 women (2.5% at 6 months).¹ Observed differences between the findings of that study and the current study may be due to differences in the population sampled or the methodology employed.

We observed that experiencing adverse symptoms may lead to method discontinuation. This agrees with a recent study that found that 42% of DMPA and 29% of OCP users stopped using their method due to dissatisfaction.⁵⁸ Most likely, this occurs when adverse effects do not resolve or women do not stay on their method long enough for resolution to occur. Most discontinuers probably failed to initiate another hormonal contraceptive as it has been observed that >80% of OCP discontinuers fail to initiate another equally effective method.²⁶ It is important, therefore, that providers assess whether women will tolerate the symptoms they report and encourage those who have doubts to change to another method or formulation early. Detecting adverse effects and offering alternative methods may require more frequent follow-up during the first 6–12 months of use than has routinely been performed with contraceptive initiation.

This study has several limitations. First, we did not randomize women to one of the three groups as the contraceptive methods under study have different efficacies. Similarly, we did not use placebos in our control group as this could have led to unintended pregnancies. It is also possible that recall bias occurred as the data were collected retrospectively or that some of our findings are due to women reporting their symptoms less often over time because they had been asked the same question at each visit. Also, data on symptom severity was not collected. Finally, we do not know how many women who discontinued the study obtained contraception from another source as many discontinuers were lost to follow-up.

In contrast to the beliefs of many healthcare providers, we observed that the noncontraceptive impact of DMPA and OCPs included more beneficial than adverse effects. Differences in findings between this study and those that showed multiple adverse effects were probably due to our inclusion of baseline data as well as a comparison group of women not using hormonal contraception. These steps allowed us to distinguish between ongoing and new complaints and to differentiate between method effects and those of being included in a research study.

It bears noting that both of the methods we studied are available for a relatively low cost in generic form. Thus, it is not necessary to prescribe name brands, which substantially increases costs, for patients to obtain the beneficial effects of hormonal contraception. By providing correct information to women regarding these popular forms of birth control, health care providers can help women choose the method that is most appropriate for their use.

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Figure 1.
Flow of recruitment and retention across the study.

Figure 2.

Prevalence of menstrual symptoms across 24 months by contraceptive method. Data presented are for women who completed all 24 months of the study ($n = 253$) for ease of interpretation (ie, without dropouts included at each time point).

Figure 3.

Prevalence of physiologic symptoms across 24 months by contraceptive method. Data presented are for women who completed all 24 months of the study ($n = 253$) for ease of interpretation (ie, without dropouts included at each time point).

Figure 4.

Prevalence of psychologic symptoms across 24 months by contraceptive method. Data presented are for women who completed all 24 months of the study (n = 253) for ease of interpretation (ie, without dropouts included at each time point).

Table 1

Sample Characteristics by Contraceptive Method at Baseline (n = 608)

Characteristic	Contraceptive Method			P
	OCP (n = 218)	DMPA (n = 219)	Not using hormonal contraception (n = 171)	
Age (years)				<i>ns</i>
16–24	112 (35.6)	120 (38.1)	83 (26.3)	
25–33	106 (36.2)	99 (33.8)	88 (30.0)	
Race/Ethnicity				<i>ns</i>
Non-Hispanic black	67 (37.6)	67 (37.6)	44 (24.7)	
Non-Hispanic white	68 (33.2)	71 (34.6)	66 (32.2)	
Hispanic	83 (36.9)	81 (36.0)	61 (27.1)	
Education				<.001
High school	96 (33.7)	114 (40.0)	75 (26.3)	
Some college, no degree	97 (37.9)	96 (37.5)	63 (24.6)	
4 year college degree	25 (37.3)	9 (13.4)	33 (49.3)	
Income (annual household)				<i>ns</i>
Unknown	2 (14.3)	10 (71.4)	2 (14.3)	
< \$15,000	54 (33.1)	61 (37.4)	48 (29.4)	
\$15,000–\$29,999	58 (37.7)	50 (32.7)	46 (29.9)	
\$30,000	104 (37.5)	98 (35.4)	75 (27.1)	
Marital Status				.01
Not married	166 (37.6)	167 (37.8)	109 (24.7)	
Currently married	52 (31.3)	52 (31.3)	62 (37.3)	
Parity*				.001
0	101 (40.4)	83 (33.2)	66 (26.4)	
1	53 (40.5)	55 (42.0)	23 (17.6)	
2	63 (27.9)	81 (35.8)	82 (36.3)	

Table entries are n (row percent).

OCP = Oral contraceptive pill; DMPA = Depot medroxyprogesterone acetate; *ns* = not statistically significant at $P < .05$.

* n = 607, 1 subject in the OCP group did not provide parity data.

Table 2

Odds Ratios (95% CI) of Developing Menstrual, Physiologic, and Psychologic Symptoms by Different Contraceptive Methods: Generalized Estimating Equations Model Results (n = 608)

Symptom	Nonhormonal	OCP	DMPA
Menstrual Symptoms			
Bleeding >20 days	1.00	1.35 (0.45–4.07)	13.37 (5.35–33.38)
Intermenstrual bleeding	1.00	2.35 (1.43–3.87)	3.61 (2.22–5.90)
Missed periods	1.00	1.40 (0.80–2.46)	96.90 (53.81–174.47)
Cramping	1.00	0.53 (0.36–0.78)	0.35 (0.24–0.51)
Physiologic symptoms			
Mastalgia	1.00	0.68 (0.47–0.99)	0.74 (0.51–1.07)
Bloating	1.00	0.80 (0.54–1.12)	0.48 (0.34–0.69)
Acne	1.00	0.35 (0.24–0.52)	0.99 (0.65–1.51)
Loss of scalp hair	1.00	0.59 (0.35–0.99)	1.39 (0.84–2.29)
Hirsutism	1.00	0.60 (0.27–1.34)	1.98 (0.90–4.36)
Weight gain	1.00	1.19 (0.90–1.57)	2.27 (1.73–2.99)
Headache	1.00	1.00 (0.74–1.38)	0.93 (0.67–1.29)
Psychologic symptoms			
Nervousness	1.00	0.48 (0.32–0.73)	0.68 (0.45–1.02)
Depressive symptoms	1.00	0.91 (0.59–1.40)	1.08 (0.71–1.62)
Mood swings	1.00	0.65 (0.44–0.97)	0.66 (0.45–0.97)
Loss of energy	1.00	0.84 (0.60–1.18)	1.55 (1.10–2.18)
Dyspareunia	1.00	0.89 (0.49–1.64)	1.11 (0.61–2.00)
Loss of libido	1.00	0.84 (0.56–1.26)	2.24 (1.50–3.34)

A separate GEE model was used for each symptom listed above.

Adjusted by race, age (16–24 yr vs 25–33 yr), follow-up visit as a categorical variable (0, 6, 12, 18, 24 month), and baseline status of the symptom (yes/no).

Table 3
Number of Women Having Menstrual Symptoms at Each Follow-up Visit by Contraceptive Method

	Baseline	6 month		12 month		18 month		24 month	
		Resolved	New	Resolved	New	Resolved	New	Resolved	New
Oral Contraceptive Pill (n = 98)									
Bleeding >20 days	1	1	0	0	2	2	1	1	0
Intermenstrual bleeding	4	4	14**	10	7	10	11*	10*	6
Missed periods	7	7	4	4	6	6	4	1	4
Cramping	80	33*	9	18	16	21	13	16	16
DMPA (n = 85)									
Bleeding >20 days	3	2	13**	11**	3	6*	2	2	2
Intermenstrual bleeding	6	3	23**	15**	5	9	5	9*	4
Missed periods	5	1*	65**	3	11	1	8**	6	1
Cramping	57	24	7	14	9	19	7	14	15
Nonhormonal (n = 70)									
Bleeding >20 days	1	1	0	0	0	0	0	0	0
Intermenstrual bleeding	6	5	1	2	4	4	1	1	2
Missed periods	7	7	3	3	5	3	0	1	4
Cramping	51	14	8	10	8	10	7	6	6

Data presented are for women who completed all 24 months of the study (n = 253) for ease of interpretation (ie, without dropouts included at each time point). Patterns did not differ for this subsample when compared to the full sample (n = 608).

* $P < .05$,

** $P < .01$.

The comparison group consisted of women not using hormonal contraception.

Resolved: Number of women reporting "yes" at the previous visit and "no" at the current visit.

New: Number of women reporting "no" at the previous visit and "yes" at the current visit.

Table 4
Number of Women Having Physiologic Symptoms at Each Follow-up Visit by Contraceptive Method

	Baseline	6 month		12 month		18 month		24 month	
		Resolved	New	Resolved	New	Resolved	New	Resolved	New
Oral Contraceptive Pill (n = 98)									
Mastalgia	28	13	10	13	8	11	9	10	12
Bloating	66	23	7	13	13	13	9	12	11
Acne	40	28*	2	8	7	6	4	3	7
Loss of scalp hair	8	8	5	2*	5	5	3	5	2
Hirsutism	11	6	0	1	1	1	1	1	2
Weight gain	23	17	20	15	17	17	14	17	19
Headache	49	18	11	17	12	8**	14	12	9*
DMPA (n = 85)									
Mastalgia	29	20	9	5	12	12	10	14*	11
Bloating	45	28*	8	12	15	16	13	11	9
Acne	33	15	7	16	8	8	14	6	9
Loss of scalp hair	8	3	11	7	2	5	1	2	5
Hirsutism	8	3	5*	5	6	3	4	3	2
Weight gain	19	14	27**	14	23	24	17	20	19
Headache	46	25	13	13	17	18	12	13	11
Nonhormonal (n = 70)									
Mastalgia	29	12	5	8	7	6	9	4	8
Bloating	42	12	7	11	6	6	11	10	9
Acne	26	9	4	10	6	5	7	7	4
Loss of scalp hair	6	3	5	7	6	6	4	2	1
Hirsutism	2	1	1	1	2	1	1	1	3
Weight gain	26	15	7	12	13	11	13	15	12
Headache	39	16	9	11	14	17	6	10	14

Data presented are for women who completed all 24 months of the study (n = 253) for ease of interpretation (ie, without dropouts included at each time point). Patterns did not differ for this subsample when compared to the full sample (n = 608).

* $P < .05$,

** $P < .01$.

The comparison group consisted of women not using hormonal contraception.

Resolved: Number of women reporting "yes" at the previous visit and "no" at the current visit.

New: Number of women reporting "no" at the previous visit and "yes" at the current visit.

Table 5
Number of Women Having Psychologic Symptoms at Each Follow-up Visit by Contraceptive Use

	Baseline	6 month		12 month		18 month		24 month	
		Resolved	New	Resolved	New	Resolved	New	Resolved	New
Oral Contraceptive Pill (n = 98)									
Nervousness	25	17	6	10	6	5	10	11	2
Depressive symptoms	25	19	7	7	6	5	9	8	3
Mood swings	69	26	7	16	6	12	5	11	6
Loss of energy	31	18	9	13	9	7	8	13	6
Dyspareunia	9	8	3	3	7	6	4	5	1
Loss of libido	20	14	10	8	2	5	5	4	6
DMPA (n = 85)									
Nervousness	18	10	5	8	4	5	6	5	5
Depressive symptoms	14	8**	10	9	8	8	4	6	3
Mood swings	54	18	4	16	9	14	9	9	6
Loss of energy	24	11*	11	12	9	10	13	13	9
Dyspareunia	8	5	3	4	3	2	5	4	2
Loss of libido	15	5*	14	10	4	2	11	10	3
Nonhormonal (n = 70)									
Nervousness	17	9	9	9	4	5	9	10	6
Depressive symptoms	24	18	5	5	6	8	5	6	6
Mood swings	48	19	7	8	10	12	8	11	6
Loss of energy	34	20	5	9	4	9	5	8	3
Dyspareunia	8	4	2	2	2	3	2	3	1
Loss of libido	17	13	7	8	5	4	5	5	2

Data presented are for women who completed all 24 months of the study (n = 253) for ease of interpretation (ie, without dropouts included at each time point). Patterns did not differ for this subsample when compared to the full sample (n = 608).

* $P < .05$,

** $P < .01$.

The comparison group consisted of women not using hormonal contraception.

Resolved: Number of women reporting “yes” at the previous visit and “no” at the current visit.

New: Number of women reporting “no” at the previous visit and “yes” at the current visit.