Source and Perceived Quality of Information Are Linked To Users' Odds of Discontinuing Hormone Therapy

In the 6–8 months after publication of findings from the Women's Health Initiative on the risks associated with postmenopausal hormone therapy, more than half of women in a large California health plan who had been regularly using hormone therapy tried to stop, even though two-thirds overall did not know what the study's main findings were, according to a survey of female members of the plan.[1] The odds of trying to stop were significantly elevated among women who were sent a letter about the study's findings, reported receiving high-quality information from the media or correctly answered at least four of five questions about risks related to hormone therapy. Most women who tried to stop using hormones succeeded, but one in four resumed use.[2] The 30% of women who had troublesome withdrawal symptoms had sharply increased odds of resuming use; odds were also elevated for women who had had a hysterectomy, had received hormones from a provider other than a gynecologist or perceived their risk of hip or spine fracture to be above average.

Knowledge and the Decision To Stop Using Hormone Therapy

Shortly after the July 2002 publication of the Women's Health Initiative findings, the health plan sent a letter to members who were using combined estrogen-progestin therapy, describing the study's findings and suggesting either that they stop using hormone therapy or that they consult with their provider about continuing. From January through March 2003, researchers conducted a telephone survey of all health plan members aged 50–69 who had used hormone therapy regularly during the year before publication of the study results. The women were asked about their key sources of information on the study's findings and about the quality of information. They also answered a multiple-choice question about the study's overall findings and five true-false questions on the risks of hormone therapy.

Analyses were based on 670 women, whose average age was 59. Roughly three-fourths were white, and more than a third had completed college. Small proportions (1–7%) had ever had a heart attack, breast or colon cancer, venous thromboembolism or osteoporosis, and fewer than a third believed their risk of these conditions to be above average. Forty percent of the women had undergone a hysterectomy. While 39% used only estrogen, 61% used both estrogen and progestin; half of the women had been using hormone therapy for at least nine years. The main reasons women cited for starting to use it were relief of hot flashes or excessive sweating (36% of women), relief of other types of symptoms (26%), hysterectomy (21%) and health promotion (17%).

Although 93% of women said they had heard about new findings on hormone therapy since July 2002, only 57% considered the information they had received high-quality (i.e., gave it a score of at least eight on a scale of 0–10). The latter proportion included 21% of those who had gotten information from the mass media and 32–34% who had gotten it from the health plan or their provider.

Sixty-four percent of women did not know what the study's overall findings were. Another 23% chose a correct answer (hormone therapy is bad for women overall or makes no difference), while 6% answered incorrectly (it is good for women overall) and the rest were unsure. The proportion of women answering correctly was higher among those who had been sent a letter than among those who had not (30% vs. 12%). Only 30% of women got four of the five questions on the risks of hormone therapy right; the proportion was again significantly higher among those who had been sent a letter than among others (37% vs. 19%).

Fifty-six percent of women had tried to stop using hormone therapy since July 2002. Among those who continued to use hormones, 26% cited relief of hot flashes as the reason, 19% protection against osteoporosis and 47% relief from other symptoms; 6% had not considered the issue, and 3% were waiting to discuss it with a provider.

In univariate analyses, a number of factors pertaining to women's background characteristics, self-perceived health status, hormone therapy use, and information on and knowledge about research findings on hormone therapy were related to whether they had attempted to discontinue use. A multivariate analysis revealed several independent associations. The odds of trying to stop hormone therapy were about three times as high among women who had been sent letters as among those who had not (odds ratio, 2.7). Women's odds were doubled if they considered information from the media to be high-quality, if their main reason for starting to use hormone therapy was health promotion, if they used a standard dose of estrogen instead of a lower dose and if they got at least four of the five true-false questions correct (1.9–2.1).

The investigators note that despite the media's extensive coverage of research findings on hormone therapy, women may not have "the requisite knowledge to make informed decisions" and may not be satisfied with the information they get. "Efforts are still required to provide women with adequate information about risks and benefits of hormone therapy," they conclude.

Predictors of Difficulty in Stopping

In a second study, using data from the same survey, the researchers assessed factors associated with difficulty in stopping hormone therapy among the 377 women who had tried to stop. The social, demographic and other characteristics of these women were generally similar to those of the study group overall. Whereas 74% of women had succeeded in stopping hormone therapy, 26% had resumed use. Overall, 72% had tried to stop abruptly, while the rest had tapered the dose or frequency of use; the success rate did not differ between these two groups.

The majority of women (70%) had no or only mild withdrawal symptoms after stopping hormone therapy, but 30% had troublesome symptoms. In half of women, these symptoms began within a week of stopping hormone therapy; the incidence did not differ by whether women stopped abruptly or gradually.

In a multivariate analysis, women who ex-

perienced troublesome withdrawal symptoms had dramatically elevated odds of not being able to stop hormone therapy (odds ratio, 8.8). Odds were also elevated for women who had undergone a hysterectomy (1.9), had received hormone therapy from a provider other than a gynecologist (2.2) or believed that their risk of hip or spine fracture was above average (1.4). Women with different types of troublesome symptoms had similarly elevated odds of stopping unsuccessfully (odds ratios, 2.2–2.4).

Further analysis revealed a set of three factors that clinicians can easily assess to identify women who are likely to have trouble discontinuing hormone therapy: having had a hysterectomy, having started hormone therapy for reasons other than health promotion and having used hormones for at least a decade. In a multivariate analysis, the odds of being unable to stop using hormone therapy were seven times as high among women with these three factors as among women with none of them.

Health care providers, the investigators note, can counsel women that most women do not experience troublesome symptoms when stopping hormone therapy, and that for those who do, behavioral measures may provide relief. Nonetheless, the investigators conclude, "it is important to identify effective measures to help users who would like to stop but are unable because of withdrawal symptoms." –*S. London*

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Power in Relationship and Pressure to Have Sex May Affect Women's Use of Emergency Contraception

The power dynamics in a relationship and pressure to have sex may be associated with a woman's decision to use emergency contraception.[1] In a clinic-based survey of women aged 15–30 years, the likelihood of emergency contraception use was elevated if the male partner dominated decision-making, if a woman had felt pressured for sex or if the male partner had a strong desire to avoid pregnancy. Other factors, such as communication within, satisfaction with and commitment to the relationship, were not associated with emergency contraception use, although previous research suggests that such factors are associated with the use of other types of contraception. Because factors associated with the use of emergency contraception may not be evident to the clinician, the findings highlight the importance of including emergency contraception in routine counseling of all women, the researchers conclude.

The study was conducted in a San Francisco Bay area Planned Parenthood clinic, community family planning clinic and university health center between 1995 and 1998. Sexually active women aged 15–30 who were not pregnant or trying to get pregnant were eligible for the study. Data on the women's background characteristics, their sexual risk factors, and characteristics of their male partner and relationship were collected through surveys and medical histories. Only women who responded to a question about whether they had used emergency contraception were included in the analyses. Information was collected for the main partner or, for women who had only casual partners, the most recent partner.

The 497 women in the sample had a mean age of 21. Fifty percent were white, 25% Hispanic, 11% Asian, 5% black and 9% other races or ethnicities. Women predominantly were unmarried (92%) and had a main partner (90%). Nearly nine in 10 had used some method of contraception at last sex, and seven in 10 said they never had unprotected sex. Most women had not been pregnant or had a sexually transmitted disease; two-thirds drank or used drugs. Seventy percent reported that they and their partner shared decision-making, but a similar proportion (65% of those with a main partner) said that they had been pressured to have sex. The majority said that a pregnancy would make them or their partner very unhappy (78% and 61%, respectively).

Seventy-nine percent of women were aware of emergency contraception, and 14% had used it. Results of bivariate analyses suggested that the prevalence of use was elevated among women who used substances, those who had felt pressured to have sex, those with partners who had a strong desire to avoid pregnancy and those with partners who dominated decision-making (although this difference was of borderline significance). There were no significant differences according to women's demographic characteristics or other relationship factors, such as commitment, satisfaction and communication.

The results of a multivariate logistic regression analysis generally reflected the bivariate results. Women who reported substance use were more likely to use emergency contraception than were those who did not (odds ratio, 2.3). And the odds of emergency contraception use were elevated among women with partners who had a strong desire to avoid pregnancy (4.2), those in a relationship in which the male partner dominated decision-making (4.2) and those who had felt pressured to have sex (2.7). Age also became significant: The older a woman was, the greater her odds of using the method (1.1).

The researchers note that the study was limited because of its cross-sectional design and because emergency contraception was measured in terms of ever-use. Emergency contraception use may be associated with the selection of partners with a strong desire to avoid pregnancy. Furthermore, women may have used emergency contraception with another partner. Nevertheless, the study suggests that relationship factors associated with the use of emergency contraception differ from those associated with the use of other types of contraception, the researchers conclude. Factors associated with emergency contraception use "do not typically appear on medical histories; it is therefore important to reach all women with [emergency contraception] information and supplies."–*T. Tamkins*

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Teenage Pregnancy Risk Rises with Childhood Exposure to Family Strife

Women exposed to abuse, violence and family strife in childhood are more likely than those without such experiences to have a teenage pregnancy; the greater the number of adverse childhood experiences, the higher the likelihood of pregnancy, according to a retrospective study of women attending a primary care

clinic in San Diego.[1] In addition, problems often attributed to teenage pregnancy, such as fetal death and family, job and financial problems in adulthood, were associated with adverse childhood experiences, but not with adolescent pregnancy itself. Programs that focus on reducing family dysfunction have the potential to prevent teenage pregnancy and psychological and social problems in adulthood, the authors conclude.

The study sample included 9,159 sexually experienced women aged 18 or older who were enrolled in the Kaiser Permanente Medical Care Program and underwent a routine health examination between 1995 and 1997. Participants were mailed questionnaires assessing their history of pregnancy and childhood exposure to abuse, violence and family strife. The questionnaire asked about eight types of childhood experiences: verbal, physical and sexual abuse; domestic violence in the household; and adult household members' substance abuse, mental illness, incarceration and divorce. Data were collected in two survey waves; the first was mailed two weeks after the health examination, and the second was mailed 1–2 years later. A Kaiser Health Appraisal questionnaire was used to measure study participants' current psychosocial issues, including stress level, fear of uncontrollable anger, and serious or disturbing problems related to family, job or finances.

The majority of participants were 50 or older (62%), were white (77%) and had attended college (72%). Sixty-six percent of the women reported at least one childhood experience involving abuse, violence or family strife. Compared with women who had had no such experiences, a greater proportion of women who reported at least one experience smoked during adolescence (30% vs. 18%) and had had five or more lifetime sex partners (39% vs. 17%). According to data collected in the second wave only (from 4,558 women), a greater proportion of women reporting at least one adverse childhood experience than of women reporting no such experiences were daughters of adolescent mothers (15% vs. 13%), drank alcohol during adolescence (55% vs. 36%), used street drugs during adolescence (15% vs. 5%) and attempted suicide during adolescence (4% vs. less than 1%).

Overall, nearly one in four women had had a teenage pregnancy. Compared with women who did not report a given adverse event, women who had experienced incarceration of a family member, household substance abuse, parental domestic violence, verbal abuse, sexual abuse, divorced parents, physical abuse or household mental illness were more likely to have become pregnant as teenagers (relative risks, 1.2–1.9). In addition, the proportion of women who had become pregnant as teenagers increased steadily from 16% among women with no adverse childhood experiences to 53% among those who reported 7–8. Compared with women who had had no such experiences, the odds of a first pregnancy in adolescence rose from 1.4 for those with one adverse experience to 5.6 for those with 7–8 experiences, with adjustment for age at interview, education and race.

Women's risk of current psychological or social problems rose with exposure to adverse experiences during childhood. Compared with women who had experienced no such events, those who had experienced 1–2 had elevated odds of serious family problems, serious job problems, serious financial problems, high stress and fear of inability to control anger (odds ratios, 1.4–1.6). These risks were even higher among women who had had five or more adverse childhood experiences (2.2–4.5).

Adolescent pregnancy was associated with modest increases in family and financial problems and in stress and fear of uncontrollable anger in women who reported adverse childhood experiences, but it was not associated with these outcomes in women without such experiences.

In ever-pregnant women, adverse childhood experiences were significantly associated with fetal death (stillbirth or miscarriage). Compared with women with no adverse experiences, those with 1–2 such experiences had 20% higher odds of a fetal death after the first or second pregnancy (odds ratio, 1.2), and those with five or more experiences had almost twice the odds (1.7). Adolescent pregnancy was not associated with fetal death.

According to their calculations of the population attributable risk associated with childhood experiences of abuse, violence and family strife, the researchers estimate that one-third of teenage pregnancies could be prevented by eliminating these exposures. They note that their analysis demonstrates "that family dysfunction has enduring and unfavorable health consequences for women during the adolescent years, the childbearing years, and beyond." When the family environment does not include adverse childhood experiences, becoming pregnant as an adolescent does not appear to raise the likelihood of long-term, negative psychosocial consequences, they note.–*T. Tamkins*

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Risk of Pregnancy-Related Death Is Sharply Elevated For Women 35 and Older

Women aged 35 or older have a risk of dying from pregnancy-related causes almost three times as high as that among women aged 25–29.[1] According to a population-based study among U.S. women, the risk is roughly twice as high for women aged 35–39 and five times as high for women aged 40 or older. Older white and black women have similar elevations of risk overall relative to their younger counterparts, but their increases in the risk of death from specific causes differ somewhat. For white women, the greatest increases in risk are from hemorrhage, cardiomyopathy (heart disease of unknown cause), embolism and other medical conditions aggravated by pregnancy; for black women, the most elevated risks of death are from hypertensive disorders of pregnancy, strokes, infections and other medical conditions.

Data for the study were obtained from the Centers for Disease Control and Prevention's Pregnancy Mortality Surveillance System, which monitors deaths occurring in U.S. women during pregnancy and the following year, and from national natality files, which contain information on live births. The investigators calculated pregnancy-related mortality ratios for five-year age-groups of women by dividing the number of reported pregnancy-related deaths in 1991–1997 by the total number of reported live births. A death was considered related to pregnancy if it resulted from complications of pregnancy, from events initiated by pregnancy or from aggravation of a condition by pregnancy. The investigators then compared the ratios of women 35 or older with those of women aged 25–29.

During the study period, 710 pregnancy-related deaths were reported among women 25–29 years old, 554 among those aged 35–39 and 211 among women 40 or older. The corresponding pregnancy-related mortality ratios were nine, 21 and 46 deaths per 100,000 live births.

The majority of these deaths (about 60%) occurred in association with pregnancies that ended in a live birth. Smaller proportions of

the deaths among women in the two older groups than of those among 25–29-year-olds were related to pregnancies ending in abortion (3.3% and 1.4%, respectively, vs. 4.5%).

Overall, women aged 35 or older had a risk of pregnancy-related death that was nearly three times as high as that of women aged 25–29 (risk ratio, 2.7); the risk was more than two times as high among women aged 35–39 and five times as high among those aged 40 or older (2.3 and 5.0, respectively). The pattern of elevated risk in the two older age-groups was similar among white women (2.4 and 4.9) and black women (2.4 and 5.6); it was also generally consistent across subgroups of women who differed with respect to number of live births, receipt and time of initiation of prenatal care, and level of education.

The most common causes of pregnancy-related death in the study population overall were hemorrhage, embolism, hypertensive disorders of pregnancy and other medical conditions. For each of these causes of death, and for three others (infection, cardiomyopathy and stroke), the mortality ratio was lowest for 25–29-years-olds, intermediate for 35–39-year-olds and highest for women aged 40 or older. The pregnancy-related mortality ratio for deaths due to anesthesia was low for women of all ages.

Among older women, the causes of death for which risk was most elevated differed somewhat by race. For older white women, hemorrhage, cardiomyopathy, embolism and other medical conditions carried the most elevated risks (2.1–2.7 for 35–39-year-olds and 5.5–7.9 for those aged 40 or older), with less excess risk from infection, hypertensive disorders of pregnancy and stroke (1.8–2.5 and 2.5–3.4, respectively). Among older black women, risks were most elevated for hypertensive disorders of pregnancy, stroke, infection and other medical conditions (2.0–4.1 and 6.2–7.6), with smaller increases for the risks of hemorrhage, embolism and cardiomyopathy (2.1–2.5 and 4.3–5.5).

The investigators comment that, in conjunction with the results from the last similar study of women 35 or older, the findings suggest that the risk of pregnancy-related death among women this age has declined over the past 20 years, yet remains higher than the risk among younger women. They note that recognizing this risk is important when providing care to older women. "To obtain a more complete picture of how such deaths in this increasing group of pregnant women can be decreased," they conclude, "the comprehensive review of maternal deaths should be a core public health function in all states."–*S. London*

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Family Planning Clinic Visits Present Opportunities For Providers to Screen for Mental Health Problems

Depression is not uncommon among women attending family planning clinics, and its association with sexual and reproductive health characteristics suggests that obstetricians and gynecologists are well situated to identify women with mood disorders and contribute to their care.[1] One in five women surveyed at clinics in southeastern Texas had moderate or severe depressive symptoms, and these women had significantly elevated odds of having used hormonal contraceptives before age 13 or having had multiple partners. They also were more likely than women without such symptoms to have had a sexually transmitted disease (STD), not to have used a contraceptive at last intercourse, not to have had sex in the last three months or to have had intercourse under the influence of alcohol or drugs.

All women who were neither pregnant nor postpartum and who made a first clinic visit between October 1999 and November 2000 were eligible to participate in the survey; the analyses are based on responses from 4,726 women who were sexually experienced and aged 40 or younger. Twenty-five percent of the sample were Hispanic, 22% black, 48% white and the rest members of other racial or ethnic groups. One-third of the women had not finished high school, half did not work outside the home and half lived in rental housing. One-third were married, and half were unmarried but had a partner.

As measured on a standard scale, 31% of women had symptoms of depression—12% mild, 14% moderate and 5% severe depression. In bivariate analyses, having moderate or severe depressive symptoms was associated with a wide range of variables related to women's background, contraceptive and sexual behavior, substance and tobacco use, and awareness of family members' contraceptive and sexual behavior and substance use. The researchers conducted logistic regression analysis to determine which of these variables were independently associated with moderate or severe depression.

In the multivariate analysis, 11 variables were significantly associated with depression; five of these pertained to women's contraceptive and sexual behavior. Nearly three-quarters of the sample reported having had more than one sexual partner, and the likelihood of depression was elevated for these women (odds ratios, 1.4 for those with two or three partners, 1.7 for those with four or five, and 2.1 for those with more). Most of the women had used hormonal contraception; the 2% who had done so before age 13 had twice as high odds of being depressed as women who had first used a hormonal method at age 18 or older (2.0). The odds were elevated among the 26% of women who had not used a contraceptive at last sex (1.4) and among the 19% who said they had ever had an STD (1.3). One in 10 women had not had sex in the previous three months, and one in four had done so under the influence of drugs or alcohol; women in both of these groups were more likely to be depressed than were women who had had sex but not under the influence of any substance (1.5 and 1.3, respectively).

Two of the variables that were associated with moderate or severe depression reflected women's awareness of family members' sexual health–related behaviors or concerns. The 24% of women who had heard a family member express concern about acquiring an STD and the 15% who had heard discussion about substance use before sex had a greater likelihood of being depressed than did those who had not had these experiences (odds ratios, 1.5 and 1.3, respectively).

Depression also was associated with three background variables and one measure of tobacco use. Hispanic women were more likely than whites to be depressed (odds ratio, 1.4), women who had not completed high school had higher odds of depression than college graduates (1.4–1.7), and unemployed women had a greater likelihood of depression than those who worked at least 20 hours a week (1.4). Regular smokers were more likely than women who had never smoked to be depressed (1.7).

Given the prevalence of depression in this

population, the researchers point out that "women's health care providers have the opportunity to provide a valuable service by screening for this disorder." Providers could incorporate questions on depressive symptoms into the medical history to identify women with depression, and could then monitor these women, refer them for further evaluation or treatment, or inform them about available resources. Additionally, knowing that a woman suffers from depression could alert a provider that she may have difficulty using particular contraceptive methods.–*D. Hollander*

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Sexual Inexperience Does Not Preclude Some Risk Of Bacterial Vaginosis

Bacterial vaginosis occurs among substantial proportions of healthy, nonpregnant young women, regardless of whether they have ever had intercourse.[1] Almost three in 10 sexually experienced women in a sample tested in 1999–2000 and one in five of those who had never had sex received a diagnosis of bacterial vaginosis, a syndrome that is associated with pelvic inflammatory disease, poor pregnancy outcomes and other reproductive health problems. The odds of receiving this diagnosis varied significantly by race and ethnicity, were elevated among women with chlamydial infection and were reduced among hormonal contraceptive users.

The sample consisted of Marine recruits participating in a longitudinal study of an intervention designed to prevent pregnancy and sexually transmitted diseases (STDs). Participants' background data were collected from standard forms they completed before undergoing pelvic examinations at a naval hospital's well-women clinic. Laboratory specimens were obtained from urine samples, participants' self-collected vaginal swabs and endocervical samples taken during the examination. A variety of diagnostic techniques were used; the analyses were based on the 1,938 women who had complete data for assessment of bacterial vaginosis according to Nugent Gram stain criteria.

Participants ranged in age from 17 to 33, but 75% were 17–19 years old. Fifty-six percent were white, 20% Hispanic, 16% black and the rest members of other racial or ethnic groups. Most (86%) had had vaginal intercourse; of these, 11% tested positive for chlamydia, and 2% each had gonorrhea and trichomoniasis. Overall, 20% reported vaginal discharge, and 7% said they had noticed a vaginal odor; during the pelvic examination, clinicians detected vaginal discharge in 5% of the women.

Bacterial vaginosis was detected in 27% of participants; the researchers used chi-square and Fisher exact tests to identify potential correlates of this diagnosis. Results showed that bacterial vaginosis was more prevalent among sexually experienced women than among their sexually inexperienced counterparts (28% vs. 18%), and that prevalence ranged from 11% among Asians and Pacific Islanders to 32–34% among blacks and Native Americans. Women who reported having vaginal discharge or noticing vaginal odor, those who had had more than one sex partner in the previous three months and those with chlamydial infection had rates of 32–41%—significantly higher than the rates among women without these characteristics. Users of hormonal contraceptives had a lower prevalence of bacterial vaginosis than nonusers (25% vs. 31%).

In a multiple logistic regression analysis controlling simultaneously for all of these factors, only self-reported vaginal discharge was not independently associated with bacterial vaginosis. Compared with Asians and Pacific Islanders, members of other racial and ethnic groups had significantly higher odds of diagnosis: The odds were more than doubled for white women (odds ratio, 2.4), roughly tripled for Hispanics and blacks (3.1 each), and nearly quadrupled for Native Americans (3.7). The odds also were elevated among women who were sexually experienced (1.7), who reported a vaginal odor (1.8), who had had multiple partners in the past three months (1.3) or who tested positive for chlamydia (1.6); they were reduced among hormonal contraceptive users (0.8).

The researchers also examined Pap smears and a recently developed colorimetric pH test, which take less time and require less specialized personnel than the Gram stain, as alternative tools for diagnosing bacterial vaginosis. Both tests performed "moderately well." (The pH test had a sensitivity of 72% and specificity of 67%; the Pap smear, 72% sensitivity and 79% specificity.) Thus, the researchers suggest that these techniques may be advantageous in some situations. In particular, the Pap smear "might be a reasonable 'first-line' screening tool during routine gynecologic examinations of healthy populations, given...that it adds no cost."

Although the findings regarding correlates of bacterial vaginosis largely echo those of previous studies, the researchers note that their sample offered several advantages over those in earlier work. First, whereas most research on bacterial vaginosis has used clinic-based samples of pregnant or STD-infected women, these analyses were based on healthy, nonpregnant women in a nonclinic setting. Additionally, the sample had the largest group of sexually inexperienced women ever evaluated for bacterial vaginosis with the Nugent criteria. Finally, it was large enough to allow comparisons across racial and ethnic groups.–*D. Hollander*

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Most Women Are Unlikely To Experience Premenstrual Mood Change with Pill Use

For most women, pill use has no impact on premenstrual mood symptoms, according to a community-based study of women from the Boston area.[1] Roughly three-quarters of participants (71%) reported that premenstrual mood symptoms neither improved nor deteriorated when they started using the pill. However, women with a history of depression that preceded pill use were significantly more likely than other women to experience pill-related premenstrual mood deterioration (odds ratio, 2.0). The odds that premenstrual mood symptoms improved with pill use tripled among women who had had premenstrual mood disturbance within the first five years after menarche (3.1) and more than doubled among those who had experienced dysmenorrhea in the same time period (2.3).

To investigate the effects of pill use on premenstrual mood symptoms, and to identify predictors of pill-related premenstrual mood change, researchers used 1995–1997 data from a community-based sample of Boston-area women aged 36–44. Data were collected through screening questionnaires and structured psychiatric interviews that employed standardized clinical criteria to diagnose past and current depression. The analyses included 658

women who had ever taken the pill for at least three months. Participants were categorized according to whether they reported improvement, deterioration or no change in either of two types of premenstrual mood symptoms—tension and irritability, and moods swings and depression—after they started using the pill.

The researchers investigated a number of variables that preceded first pill use: one or more episodes of major depression; being overweight as a young adult; and characteristics of the menstrual cycle within the first five years after menarche (i.e., early-onset). They used chi-square and other appropriate tests to identify possible predictors of pill-related premenstrual mood change, which were then analyzed in logistic regression analyses that adjusted for clinical characteristics.

Seventy-one percent of respondents reported no difference in premenstrual mood symptoms before and after beginning pill use; 16% said that symptoms deteriorated, and 12% said they improved. In each group, virtually all participants were white; the majority (roughly 60–80%) were married, working, Catholic women who had had at least one child and were educated at the college level or higher. The women's mean age was 40 years.

Three potential predictors of pill-related premenstrual mood change were identified through the univariate analyses. Among women who had experienced an episode of major depression prior to taking the pill, a significantly larger proportion reported that premenstrual moods worsened with pill use than reported they improved (25% vs. 14%). In addition, greater proportions reported pill-related premenstrual mood improvement than decline among respondents with early-onset premenstrual mood disturbance (23% vs. 18%) and early-onset dysmenorrhea (19% vs. 16%). Some 60–65% of women with each of these characteristics reported no change.

Results of the multivariate analyses indicated that women with a history of depression were significantly more likely than other women to report pill-related premenstrual mood deterioration (odds ratio, 2.0). Moreover, women with early-onset premenstrual mood disturbance had increased odds of premenstrual mood symptoms' improving with pill use (3.1), as did those with early-onset dysmenorrhea (2.3). No other clinical predictors were significantly associated with a greater likelihood of pill-related premenstrual mood improvement or decline.

While the researchers acknowledge the limitations of retrospectively reported data, they suggest that their findings have important implications for health care providers. For example, women with a history of depression may be more sensitive to the hormonal effects of pill use and should be informed of the potentially negative impact of the pill on premenstrual mood symptoms; however, these women need not be prevented from taking the pill, since most are unlikely to be affected. In addition, women with early-onset premenstrual mood disturbance who do not respond positively to the pill should be assessed for other, treatable conditions, such as clinical depression. The researchers conclude that "gynecologists can use information about previous depression, premenstrual mood disturbance, and dysmenorrhea to inform clinical decisions about the potential beneficial and deleterious impact of [the pill] on premenstrual mood."—*R. MacLean*

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