

The Impact of Menstrual Side Effects on Contraceptive Discontinuation: Findings from a Longitudinal Study In Cairo, Egypt

CONTEXT: Although many research studies have documented the relationship between menstrual side effects of contraceptives and discontinuation of use, few have sought to identify factors that predispose women to discontinue because of changes in bleeding patterns. Such information is important to enable family planning providers to better help women and couples choose appropriate methods and use them successfully.

METHODS: Forty-eight women participating in six focus group discussions described their experiences using the IUD, the hormonal implant or the three-month injectable. Subsequently, 259 women using one of these methods for the first time were followed for up to 18 months to determine patterns of menstrual bleeding and perceptions of menstrual cycle change over time. Multivariable analytical methods were used to examine the associations between selected measures and method discontinuation.

RESULTS: Contraceptive discontinuation differed by method: Nearly 70% of injectable users had stopped using their chosen method after one year, compared with 34% of IUD users and 10% of implant users. Before initiating a method, women reported an average of five bleeding days per cycle. During the first six months of use, IUD users reported an average of six days of bleeding per cycle; injectable and implant users reported 11–12. In multivariable models, each additional day of bleeding was significantly associated with a 2–4% increase in discontinuation, depending on method type. Among IUD users, women whose husbands knew that they had visited a clinic to initiate a method were less likely than others to discontinue method use (hazard ratio, –1.9). Age was significantly associated with decreased discontinuation among implant users.

CONCLUSION: Counseling about bleeding and other side effects should be tailored to women's personal contexts and contraceptive experiences.

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By Elizabeth Tolley, Sarah Loza, Laila Kafafi and Stirling Cummings

Elizabeth Tolley is behavioral scientist, Behavioral and Social Science Research Unit, Family Health International (FHI), Durham, NC, USA. Sarah Loza is director, Social Planning, Analysis and Administration Consultants, Cairo, Egypt. At the time this article was written, Laila Kafafi was country director, FHI, Cairo; and Stirling Cummings was research analyst, FHI, Durham.

Many research studies have documented the relationship between menstrual side effects of certain contraceptives and women's discontinuation of use.¹ A few studies have sought to identify user characteristics or aspects of the service delivery environment that predispose some women to discontinue because of changes in bleeding patterns.² Yet by focusing on clinical measures of bleeding or by limiting research to a single contraceptive method or class of methods, these studies do little to explain the context in which menstrual side effects lead to discontinuation. Family planning programs need to better understand women's experiences of menstrual-related side effects and how personal and service delivery factors may influence these experiences if they are going to help women and couples choose appropriate methods, use them successfully and meet their reproductive goals.

This study, which was conducted in Cairo, Egypt, with first-time users of the IUD, the hormonal implant and the depot medroxyprogesterone acetate (DMPA) three-month injectable, was designed to improve understanding of the role that the menstrual side effects of contraceptive methods play in women's decisions to discontinue use of those methods.

MENSTRUAL SIDE EFFECTS AND DISCONTINUATION Contraceptive Methods

Many contraceptive methods produce changes in the menstrual cycle. However, such menstrual changes may vary across individuals, methods and duration of use, complicating providers' task of adequately counseling contraceptive clients. For example, IUDs have been associated with increased menstrual bleeding and cramping.³ In contrast, the implant and the injectable can cause irregularity in the menstrual cycle, including extended periods of light bleeding or temporary amenorrhea; they may also increase bleeding. And whereas users of the injectable become more likely to miss periods over time, implant users become less likely to do so.⁴

Few studies have examined the relative contribution of individual menstrual side effects (i.e., heavy or prolonged bleeding, spotting and amenorrhea) to discontinuation of specific methods, and those studies have sometimes come to contradictory conclusions. For example, among 252 injectable users who participated in a population-based survey of women in New Zealand, the most important reason for discontinuation within 21 months of adoption was irregular bleeding, followed by heavy bleeding. However,

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amenorrhea was more frequently cited than any other menstrual side effect as a reason for discontinuing between two and five years after adoption.⁵ In a randomized trial of two trimonthly injectables, amenorrhea was found to be a major reason for discontinuation of DMPA by 12 months.⁶ In contrast, prolonged or heavy bleeding is the most frequently cited reason for discontinuation of the implant.⁷ In addition, although some studies have compared bleeding patterns induced by similar types of contraceptive methods (i.e., Norplant vs. Nestorone implants,⁸ one-month injectables,⁹ or Net-En vs. DMPA trimonthly injectables¹⁰), only a few studies have compared menstrual patterns and their relationship with discontinuation across different classes of contraceptive methods.¹¹ Two such studies reported significantly lower discontinuation among implant users than among users of other methods, despite similar or even more pronounced menstrual cycle disturbances. The authors concluded that higher continuation rates might be related more to personal characteristics or service delivery factors than to bleeding patterns.

Women's Characteristics and Perceptions

A seminal study conducted in the early 1980s suggested that women's perceptions of menstrual cycle change might explain decisions to stop using a contraceptive method better than the actual quantity or duration of blood loss.¹² Since then, however, few studies have attempted to understand how women perceive menstrual changes or to identify individual characteristics or circumstances that influence women's ability to tolerate menstrual side effects. In a re-analysis of data from a multicenter IUD trial, Muslim women were more likely than Protestant women, and women with no formal education were more likely than those with some education, to discontinue use due to bleeding and pain.¹³ Findings from a qualitative study in Senegal suggest that women's fertility intentions might influence their willingness to tolerate the menstrual side effects of contraceptives.¹⁴ Among new injectable users in Bolivia, those with fewer children were more likely to discontinue using the method than were those with four or more children; in addition, women who believed that menstruation was important to maintain good health were more likely than others to discontinue the method.¹⁵

Service Delivery Factors

Providers' attitudes are likely to influence women's perceptions of bleeding changes in a number of ways: For example, according to a 1996 Egyptian study of provider counseling on the injectable, more than half of physicians, nurses and midwives believed that women should use the method only if they desired no more children. Many of those providers felt that persistent amenorrhea might lead to sterility or other health problems. In such cases, family planning providers are likely to steer clients away from methods that might otherwise be suitable for them.¹⁶

On the other hand, providers sometimes minimize the menstrual and other side effects associated with certain

methods: For example, some implant users in Senegal complained that providers neglected to tell them about some or any menstrual side effects, or simply told them not to worry.¹⁷ The information about bleeding and other side effects that a provider gives or withholds during initial counseling will help shape a new user's expectations about the method.

Literature on quality of care in family planning suggests that providers' interactions with clients, including the kinds of information they provide, influence contraceptive continuation rates;¹⁸ however, the evidence for this link is spotty. For example, several studies found that injectable users who received intensive structured counseling, including information about the possible hormonal side effects, discontinued their method at lower rates than did those who received routine counseling.¹⁹ Recent evaluation studies in the Philippines and Senegal, however, failed to show a link between discontinuation and client-centered services that emphasized information on method side effects and their management.²⁰ In any case, few studies have specifically examined how providers counsel women about menstrual side effects or evaluated how counseling affects the relationship between side effects and discontinuation.

This study addresses gaps in the literature by examining not only a range of reported menstrual side effects across time, but also women's perceptions of menstrual cycle change. It assesses the influence of personal characteristics and service delivery factors on the relationship between menstrual effects and discontinuation, and considers how these relationships might differ across contraceptive methods.

METHODS

Data for this study came from three sources. First, we collected qualitative data in November 1998 from six focus group discussions with current IUD, injectable and implant users; additional qualitative data were collected from in-depth interviews with six participants of the focus group discussions who complained of excessive bleeding and with five family planning providers. Some of the topics explored included general experiences using contraceptive methods, experience of and attitudes toward menstrual changes occurring during contraceptive use, partners' roles in decisions to adopt and continue to use contraceptives, and counseling about and treatment of bleeding.

Second, we used data from a longitudinal study conducted from July 1999 to March 2001 among first-time users of each of the three contraceptive methods. Women were recruited from three public clinics in Cairo, Egypt, where all three methods were available. During the first six months of method use, women filled out menstrual diaries developed using the World Health Organization's recommendations for analysis of bleeding patterns.²¹ At the admissions visit, women were given a diary and instructed to record either the presence or absence of bleeding each day, as well as to characterize each bleeding episode as spotting, regular bleeding or heavy bleeding. Women's menstrual diaries were reviewed and collected at the two-month follow-

up interview, and women were provided with a new diary in which to record menstrual data for the next four months. The diaries were collected again at the six-month follow-up visit.

Third, we used survey data collected from study participants over the course of 18 months. Trained interviewers administered a baseline survey to clinic clients on the day they accepted their new method. The survey asked women about their social and demographic characteristics, their menstrual history, the role of their husband and other individuals in their current method selection and whether they had received counseling before accepting their method. Follow-up interviews administered in women's homes at two, six, 12 and 18 months collected information on women's general attitudes toward the method since their last interview, their menstrual patterns and perceptions of menstrual cycle change, their experience of side effects in addition to bleeding, the effect of menstruation on their daily routines and their treatment of bleeding. In addition, women who discontinued before 18 months were asked about their reasons for stopping the method and about future family planning intentions.

The field team made intensive efforts to follow women. Consequently, during the 18-month study, only 24 women (9%) were lost to follow-up. There was no loss after the second interview at six months, and the number of women lost to follow-up did not differ greatly by type of contraceptive method. Also, women who could not be contacted did not differ significantly from others in terms of age, education, total number of children or desire for no more children.

Measures

• **Dependent variable.** For the longitudinal study, a continuous dependent variable was created to capture the total number of days of method use. For women who were using the IUD or the implant, this variable was calculated by subtracting the date of study admission from the date of the 18-month follow-up visit or from the date they had their contraceptive method removed, whichever came first. For injectable users who remained in the study for 18 months, length of use was calculated in the same manner as for IUD and implant users; however, for those who discontinued the method early, the variable was calculated by subtracting the admissions date from the date of last injection and then adding an additional 90 days.

• **Independent variables.** We assessed four independent variables related to menstrual bleeding: bleeding intensity, bleeding length, perception of menstrual cycle change and typical number of days of menstrual bleeding at baseline. Bleeding intensity was a four-category, ordinal variable based on information from the menstrual diaries; women recorded bleeding on each day as none, spotting, regular or heavy. Bleeding length was a continuous variable that measured women's number of consecutive days of menses in their last completed cycle. Days were considered consecutive if there were fewer than two nonbleeding days between

them.^{22*} Information on women's perception of menstrual cycle changes was determined by asking "Have you experienced any changes in your menstrual cycle since the last time we spoke?" Those who answered "yes" were asked to choose what kinds of changes they had experienced from a list of potential changes. Finally, a continuous variable measuring women's typical number of bleeding days per cycle before beginning their contraceptive method was used to establish a baseline and, therefore, control for individuals' normal menstrual patterns.

• **Other variables.** Additional variables were included to examine potential relationships with the dependent variable. These included measures of personal characteristics (i.e., age, parity, desire for more children, expectations about bleeding, husband's support of family planning and his knowledge of the contraceptive visit), physical and emotional characteristics (i.e., pain, fatigue and anxiety), and service delivery characteristics (i.e., general counseling and information about bleeding).

Analysis

Survey and diary data were entered in EpiInfo 6 and then exported to SAS 8.2 for data cleaning and analysis. We computed descriptive statistics (including means and ranges for continuous variables, and frequencies for categorical variables) for each wave of data collection. We conducted multivariable analyses to examine the effect of baseline and time-dependent measures on discontinuation regardless of cause using a nonproportional hazards model (an extension of the Cox model) in SAS. This approach was chosen because time-dependent covariates could change at different rates for different respondents, given that information was repeatedly collected from each participant until loss to follow-up, discontinuation or completion. We built final models using a backward elimination technique. When interactions were determined to be significant, we included the main effects of that interaction in the model. We further validated the findings from the multivariable analyses by rerunning models including only data from continuers and those who discontinued because of menstrual changes (i.e., eliminating data from women who discontinued for other reasons.)

The analysis of the diary data required estimating the menstrual cycle for each study participant. For this analysis, we considered two days without menstrual bleeding followed by one day of bleeding to indicate the initiation of a menstrual cycle. Use of this definition made it possible to summarize bleeding extent and length for each cycle and, therefore, for each group of respondents using a specific method.

*Some respondents were menstruating at the time of their survey visit; therefore, it was not possible to obtain information on their complete menstrual periods. In these cases, we used diary data to impute values for the survey database. To be sure the two data sources were equivalent, we compared nonmissing values of menstrual length from the survey data with corresponding values from the diary data. We used a matched pairs experiment to test differences for significance. According to the analysis, values for individual respondents in the diary and the survey data were not significantly different.

RESULTS

Social and Demographic Characteristics

Forty-eight women participated in focus group discussions during the formative phase of research. Women participating in the IUD and implant focus group discussions were, on average, 33–34 years old; injectable users had a mean age of nearly 39 years. Overall, across all three groups, women had an average of four children. At least two-thirds of IUD and implant users had no formal schooling, compared with fewer than half of injectable users. IUD and injectable participants had been using their method for an average of 3.0–3.5 years; on average, implant users had been using their method for less than one year.

A total of 259 women participated in the longitudinal study—103 IUD users, 87 injectable users and 69 implant users. Based on t tests of all possible pairwise comparisons, women’s social and demographic characteristics differed significantly across method-use groups (Table 1). On average, women using the implant were 31.9—about two years older than injectable users (29.8) and almost seven years older than IUD users (25.1). Compared with other women, implant users had the greatest mean number of children (3.6), were the least likely to want another child (12%) and the most likely to have used a family planning method in the past (96%). Also, women using the implant had significantly less education than women in the other two groups. Because of baseline differences in the characteristics of women using the three contraceptive methods, we created separate analytical models of discontinuation for each method.

Influence of Method on Discontinuation

Discontinuation rates differed across methods: At six months, 47% of injectable users had stopped using their chosen method, compared with 22% of IUD users and 9% of implant users. By month 12, nearly 69% of injectable users had discontinued use, compared with 34% of IUD users and 10% of implant users. And by the end of the study, these proportions were 90% for injectable users, 52% for IUD users and 19% for implant users.

TABLE 1. Selected characteristics of survey respondents, by contraceptive method, Cairo, 1999–2001

Characteristic	All (N=103)	IUD (N=259)	Injectable (N=87)	Implant (N=69)
Means				
Age (yrs.)	28.5	25.1	29.8	31.9
No. of children	2.5	1.6	2.6	3.6
Percentages				
Education				
None	21	15	20	33
Primary or secondary	69	70	75	58
>secondary	10	15	5	9
Might like another child	45	72	40	12
Ever used family planning	67	35	82	96

Note: Significant differences (p<.05) found for pairwise comparisons of methods on all social and demographic characteristics, except education level of IUD and injectable users.

TABLE 2. Patterns of menstrual bleeding among contraceptive users during the first six months of use, by method

Pattern	IUD (N=97)	Injectable (N=72)	Implant (N=57)
Average no. of cycles	4.8	2.5	3.5
Average days of any bleeding per cycle	6.1	11.4	11.8
Days of bleeding			
None	25.1	48.2	66.3
Spotting	2.2	6.0	3.7
Regular	2.7	3.8	6.0
Heavy	1.2	1.6	2.2

Changes in Menstrual Bleeding

In the focus group discussions, women reported having experienced changes in the duration and intensity of bleeding after initiating method use; these changes seemed to differ by method. The majority of IUD users described increases of several days in the length of their usual periods. Some also described heavier bleeding. For example, one 26-year-old woman who had been using the IUD for about eight months said “It changed. Before the IUD, it came every 20–25 days and stayed for four days. Now it is heavy for seven days and has been for the past two or three months.” Other IUD users further characterized this heavy bleeding as “thick,” “the color of meat” or like a “hemorrhage.”

Likewise, six implant users suggested that their periods had increased and become heavier since adopting the method; however, their descriptions of bleeding episodes were often less predictable than those of IUD users. Women described long periods without bleeding followed by “flooding.” Some reported bleeding so severe that they could not even walk. Others described long stretches of bleeding: One 33-year-old woman remarked: “When I have my menses, it’s heavy and may last the whole month. ...I change up to 10 times a day, and it comes down in clots.”

In contrast, six out of 12 implant users and most injectable users had experienced decreased bleeding as a result of their method. Some women reported that their periods had stopped altogether, whereas others described their periods coming as “traces” or “signs.” A 47-year-old injectable user who had been using the method for two years gave this description of her menstrual bleeding: “Two or three drops, then it stopped for four months. And it came again for a while, and then stopped. I mean that when the injection is due, it gives me a sign. It comes down as a drop or two. ...The first two cycles I had spotting. Then it stopped altogether.”

Diary data provide further evidence of changes in menstrual bleeding during the first six months of method use. IUD users tended to experience fairly regular cycles (Table 2). On average, they menstruated about once per month; bleeding lasted for six days, of which 1.2 days were characterized as heavy. In contrast, implant and injectable users recorded greater variation: Some women experienced long periods of bleeding or spotting, whereas others reported no bleeding after method initiation. Injectable and implant users had fewer menstrual cycles than IUD users (2.5 and

3.5 vs. 4.8), but their periods lasted for almost twice as many consecutive days (11.4 and 11.8 vs. 6.1) and had more heavy days (1.6 and 2.2 vs. 1.2). Finally, implant users recorded the highest ratio of regular to heavy days in each menstrual period, whereas injectable users noted the most days of spotting (6.0).

In contrast to diary data, survey data provide intermittent snapshots of the menstrual experiences of women who continued using their method for up to 18 months. Before beginning their method, participants had cycles that consisted, on average, of five days of menstrual bleeding followed by 25 days of no bleeding (Figure 1); women who chose the implant had a longer duration of bleeding (5.7 days) than those who chose the injectable (4.9 days) or the IUD (4.6 days). Over time, patterns in the mean duration of menstrual bleeding varied substantially across the three contraceptive methods. Among women who chose the IUD, the number of bleeding days increased slightly once they began the method, but stabilized over time. In contrast, women using the two long-acting hormonal methods reported sharp swings in menstrual patterns. During the first several months, implant and injectable users experienced dramatic increases in the length of bleeding episodes. Continuing implant and injectable users subsequently reported sharp declines in bleeding; however, these declines may be exaggerated, given the possibility that women with longer periods discontinued earlier than those with shorter periods. Finally, between 12 and 18 months, the proportion of implant users reporting some bleeding increased, and the mean number of bleeding days again rose, whereas women continuing injectable use reported further declines in average number of bleeding days.

Some women using each method recorded extremely long bleeding episodes after initiating their methods. At least one IUD user reported bleeding for 45 consecutive days (not shown); the maximum number of consecutive bleeding days was 177 for implant users and 86 for in-

TABLE 3. Percentage of contraceptive users who reported perception that their menstrual cycle had changed and who worried about change, by method, according to follow-up visit

Visit and report	Total	IUD	Injectable	Implant
2 mos.	(N=232)	(N=89)	(N=80)	(N=63)
Felt cycle had changed	72	46	90	86
Worried about change	26	20	31	29
6 mos.	(N=169)	(N=72)	(N=40)	(N=57)
Felt cycle had changed	43	33	60	42
Worried about change	14	13	10	18
12 mos.	(N=143)	(N=63)	(N=24)	(N=56)
Felt cycle had changed	22	25	4	25
Worried about change	4	6	0	4
18 mos.	(N=105)	(N=46)	(N=8)	(N=51)
Felt cycle had changed	35	33	13	41
Worried about change	20	15	13	25

jectable users. By six months, the maximum reported length of bleeding episodes had decreased for all methods, but remained high—17 days for IUD users, 48 days for implant users and 35 days for injectable users.

Perceptions of Bleeding Change

The study examined whether women perceived changes in their menstrual cycles after beginning method use, and if so, what kinds of changes they noticed and worried about. In the focus group discussions, women sometimes seemed to have adjusted their perceptions of normalcy in response to changes in their menstrual cycles. For example, one injectable user who reported bleeding for about 9–10 days every three months, but who used to bleed for about three days a month before initiating the method, explained: “When I calculated it, I said ‘This is correct.’ It all comes at once. The three months come in one month, then it is normal.”

According to the survey data, 72% of women noticed menstrual changes during the first two months after initiating their new method (Table 3), but only 26% worried about changes. Over the first 12 months, the proportion of women reporting that their cycle was different from the last time they were interviewed declined, and progressively smaller proportions of women who did perceive changes worried about them. Between 12 and 18 months, however, perceptions and worries related to menstrual changes increased among continuing IUD and implant users. Women were more likely to worry about increases than about decreases in the number of days or volume of bleeding (not shown).

Influence of Bleeding Changes on Discontinuation

Women who discontinued method use were asked to give their most important reasons for stopping. More than 40% of discontinuers of each method cited heavy or long menstrual bleeding as one of the most important reasons (not shown). In addition, lack of menstrual bleeding was mentioned by almost one-third of injectable discontinuers. Although nearly half of implant discontinuers cited other side effects as an important reason for discontinuing the method,

FIGURE 1. Women’s average number of bleeding days per cycle, by method, according to round of data collection

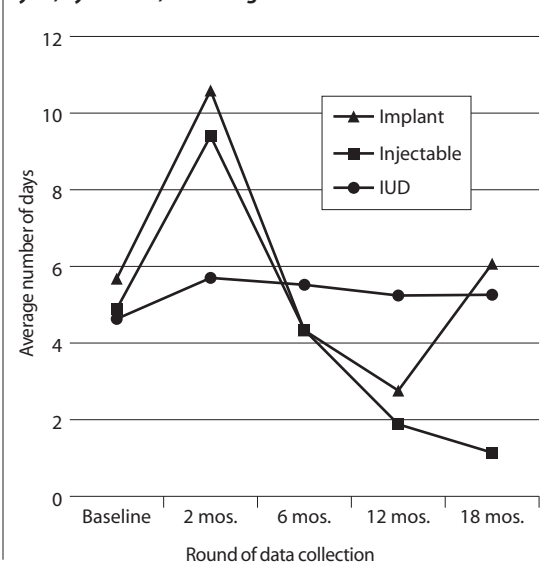


TABLE 4. Hazard ratios from Cox regression models predicting the likelihood of contraceptive discontinuation, by method, according to selected characteristics

Characteristics	IUD	Injectable	Implant
Age	0.96	1.00	0.85*
Baseline bleeding length	1.01	1.18	1.11
Perception of menstrual cycle change	1.01	0.74	3.51
Follow-up bleeding length	1.03*	1.04**	1.02*
Husband's knowledge of clinic visit	0.15**	1.19	na
Received initial counseling	1.98	1.60	0.39
Bleeding length x counseling	1.03	0.99	1.18**

*p<.05. **p<.01. Notes: na=not applicable. The husband's knowledge variable was not included in the implant model because of lack of variation.

none mentioned desire for pregnancy. However, this was a factor for 7% of women who stopped using the injectable and 20% who discontinued the IUD.

Using menstrual diary data, we examined whether there were differences between continuers and discontinuers (as of six months of use) in the proportion of total days recorded for each level of bleeding. Compared with IUD and implant discontinuers, women who continued using those methods recorded a significantly greater proportion of non-bleeding to total days (not shown). In addition, implant continuers recorded a significantly smaller ratio of regular and heavy bleeding days to total days than did discontinuers. There were no such differences between women who continued using the injectable and those who did not.

Finally, we conducted multivariable analyses of the survey data to determine whether personal characteristics, spousal attitudes or knowledge, or having received counseling at method initiation helped explain the relationship between bleeding length and discontinuation. Bleeding length was the only factor that independently predicted discontinuation among users of all three methods (Table 4): With all other variables in the model held constant, each additional day of bleeding increased the likelihood of discontinuation by approximately 2% for implant users, 3% for IUD users and 4% for injectable users. Women who reported more than 15–20 days of bleeding had an elevated risk of discontinuation, no matter what method they were using (not shown).

Bleeding length was the only predictor of discontinuation for injectable users. Among IUD users, however, women whose husbands knew that they had visited a clinic to initiate a method were less likely than others to discontinue method use (hazard ratio, 0.2). Husband's knowledge was not included in the implant model, because all but a few husbands of implant users were aware of their wife's visit to initiate the method. The relative importance of husband's knowledge for IUD users is likely explained by the fact that IUD users were, on average, 5–7 years younger than other women, had fewer children and were less experienced in contraceptive use. Therefore, such women would be less likely than others to make independent decisions about whether or which contraceptive method to use, or even about whether they could visit the clinic or market.

In addition to bleeding length, two other variables pre-

dicted implant discontinuation—age and counseling. Older women were significantly less likely than younger women to discontinue implant use (0.9). The relationship between counseling and discontinuation was more complex. For example, as a main effect, counseling (or lack of counseling) did not predict discontinuation for any of the three methods. In interaction with bleeding length, however, it significantly predicted implant discontinuation (1.2). The relationship between counseling and discontinuation of implant use might at first seem counterintuitive. Among implant users who had not received counseling before initiating their method, each additional day of bleeding increased the likelihood of discontinuation by about 2%. In contrast, among women who had been counseled, each additional day of bleeding increased the likelihood of discontinuation by approximately 20%.

The Counseling Conundrum

Having received counseling before initiating a method appeared, at best, to be superfluous, or in the case of implant users, to exacerbate discontinuation. How do we explain this conundrum? Both qualitative and quantitative data provide some context in which to examine the role of counseling on contraceptive discontinuation.

First, women did not always receive method-specific information before beginning a new contraceptive method. Indeed, fewer than half of survey participants (45%) indicated that they had received any information about their method prior to initiation (Table 5). Similarly, at least one or two women from each discussion group indicated that they were not told much about their method before obtaining it. In a comment that mirrored those of several others, an injectable user noted: “They checked my blood pres-

TABLE 5. Percentage of contraceptive users who received counseling at the time of method initiation, by method, according to type of counseling

Type	Total	IUD	Injectable	Implant
Any	45	54	33	45
≥1 advantage†	88	98	59	97
Long period of protection	66	66	38	94
Does not affect fertility	24	48	0	3
Effective in preventing pregnancy	15	9	10	29
Does not affect breast-feeding	12	25	0	0
Does not affect menstrual cycle	10	5	7	19
Produces only temporary menstrual changes	9	20	0	0
Is suitable for my health	7	2	14	10
≥1 disadvantage†	40	20	79	39
Causes irregular bleeding	24	18	28	32
Increases bleeding	8	7	14	3
Stops menstruation	17	2	59	6
Causes sterility	7	0	28	0

†List includes only specific advantages or disadvantages spontaneously mentioned by at least 5% of the total sample. Notes: 259 women (103 IUD users, 87 injectable users and 69 implant users) received any counseling; 116 women (56 IUD users, 29 injectable users and 31 implant users) were counseled about at least one advantage; and 46 women (11 IUD users, 23 injectable users and 12 implant users) were counseled about at least one disadvantage.

sure, gave me a card and told me to come back every three months.” According to an IUD user, “[The doctor] said I should check on it every now and then. That every time I felt anything, I should check on it.” An implant user commented, “I asked [the doctor] if it had any side effects. She told me it was very good, so I told her fine, okay.”

Perhaps this lack of counseling was not problematic for women who came to the clinic desiring a particular contraceptive method and armed with information from more experienced friends and family members. However, it is surprising that a lack of counseling did not emerge as an important predictor of discontinuation for first-time IUD users, who tended to be younger and to have less experience with contraceptive use.

Second, it appears that some women who received counseling were provided with only partial information about their chosen method. The survey data indicated that greater proportions of IUD and implant users who had been counseled had been told about the method’s advantages than its disadvantages. For implant users, the advantages mentioned included both factual information (e.g., its long period of protection) and inaccurate information (e.g., that the method does not affect the menstrual cycle). In contrast, injectable users who had received counseling were more likely to have been told about the method’s disadvantages than its advantages.

Data from in-depth interviews reinforce the picture of incomplete counseling. For example, discussing her approach to counseling a client about the injectable, one provider explained: “We let her know that the period will stop and that’s a normal thing. And I explain the menstrual period to her and how it works and affects the ovulation, [that] there won’t be ova and no pregnancy. And she becomes convinced with that.”

Indeed, at least eight implant and injectable users were told by their providers that the method might stop their periods. When their experiences contrasted with doctors’ explanations, women were at least a little surprised. A younger implant user explained “They said nothing. ...It caused no problems, but they said that the period would not come. Then approximately 15 days after I inserted them, I bled. I had inserted them on the third day of the period, so I was alarmed.”

DISCUSSION

This study aimed to determine the impact of menstrual changes on contraceptive method use. It provided an up-close view of the menstrual patterns women experience while using different methods and of how these patterns change over time. We found dramatic and, to some degree, unanticipated differences in discontinuation by method, and identified menstrual cycle effects—especially increased days of bleeding—as an important predictor of discontinuation for all three methods studied. Finally, the findings suggest that personal and service delivery factors help explain the relationship between bleeding and discontinuation, at least for some methods.

Contraceptive Effects on Menstrual Patterns

The bleeding patterns women experienced were similar to those suggested in the literature.²³ In general, IUD users reported slightly longer bleeding episodes after initiating the method, whereas women using the injectable or implant experienced a wide variety of menstrual changes. Over time, injectable users increasingly tended to miss menstrual periods, whereas implant users became less likely to do so.

However, because of the longitudinal and comparative nature of this study, the findings also emphasize how variable menstrual cycle effects may be for individual users over time, between individual women using the same method and between different contraceptive methods. For example, the six months of diary data suggest that changes in a woman’s menstrual cycle can be quite dramatic in the short-term, especially for women using the injectable or implant. Though more than 20% of injectable and implant users reported no menstrual bleeding within the first two months of use, others recorded extremely long periods of bleeding. During the first six months, women initiating these two methods recorded, on average, almost twice as many days of bleeding per cycle as new IUD users did, as well as more days of regular and heavy bleeding. Compared with other method users, women using the IUD experienced fairly moderate changes in their menstrual cycles.

Menstrual Effects on Discontinuation

Bleeding length emerged as an important predictor of discontinuation, no matter which method was being used. From a clinical perspective, this finding has several implications. First, providers should recognize that medical views on contraceptive side effects do not always resonate with women using the method. For example, literature on the implant and injectable often emphasize the overall reduction in blood loss and its positive effect on women’s hemoglobin levels.²⁴ However, providers should recognize that even light bleeding, when prolonged, may lead women to worry and discontinue use. Reported increases in bleeding length predicted discontinuation, even when women’s perceptions of those changes did not.

Second, our findings on bleeding length highlight the need to identify treatment regimens that work to reduce menstrual blood loss and regulate menstrual cycle changes induced by contraceptive use. Unfortunately, there have been few studies of simple regimens that might improve continuation rates. According to a survey conducted by Family Health International, provision of combined oral contraceptives was the most commonly used intervention, followed by estrogen only, to treat bleeding problems associated with progestin-only contraceptives.²⁵ However, among the 73 providers who said they treated bleeding problems, no two used the same dosage and duration.

Other Factors

Some personal and service delivery factors emerged as important in explaining the relationship between bleeding and discontinuation. Of the various personal characteris-

tics we examined, only age (among implant users) and husband's knowledge (among IUD users) contributed to our understanding of why bleeding leads to discontinuation. In contrast to previous findings,²⁶ neither total number of children nor desire for more children helped explain discontinuation in this study. Although counseling appeared to be insufficient for an important proportion of women in this study, the complex relationship between counseling, bleeding and discontinuation suggests the possibility that more information is not always better.

Study Limitations

The requirement that participants be first-time users of the method they initiated when joining the study had a very strong effect on the findings—one that had not been recognized during study design. This criterion essentially created three very different samples of women, in which personal characteristics correlated with method. From an analytic perspective, these distinctly different method groups prevented us from aggregating our data to examine the effect of menstrual and other factors on discontinuation, regardless of specific method used. In addition, the correlation between personal characteristics and method may have obscured potentially important relationships between many of the personal factors (i.e., number of children, desire for more children, education level and spousal characteristics), bleeding and discontinuation. There was much greater variation in these variables across the entire study sample, and there is probably much greater diversity in personal characteristics among users of each of the methods in the real world.

CONCLUSIONS

For many women who discontinue their method, menstrual changes are an important reason. The availability of accurate information also may affect continuation rates. Counseling about side effects can be an effective way to increase continuation rates;²⁷ however, it is less clear what specific messages are needed and at what points during use. Our findings raise the possibility that counseling about bleeding and other side effects should be tailored to the personal and contraceptive experiences of women, and that partners may play an important role in how well some women tolerate contraceptive-related bleeding.

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RESUMEN

Contexto: Si bien numerosos estudios de investigación han documentado la relación que existe entre los efectos secundarios que tienen los anticonceptivos sobre la menstruación y la discontinuación de un método, pocos de ellos han procurado identificar los factores que predisponen a la mujer a abandonar el uso de anticonceptivos debido al sangrado. Este tipo de información es importante porque puede permitir a los proveedores de los servicios de planificación familiar asistir mejor a las mujeres y a las parejas en la selección de métodos apropiados y a utilizarlos con éxito.

Métodos: Cuarenta y ocho mujeres que participaron en seis grupos focales describieron sus experiencias con el uso del DIU, el implante hormonal y los inyectables trimestrales. También, se realizó un seguimiento de hasta 18 meses a 259 mujeres que utilizaban alguno de estos métodos por primera vez para determinar los casos de sangrado menstrual y la percepción de cambios del ciclo menstrual durante un periodo determinado. Se utilizaron métodos de análisis multivariado para examinar la relación que existe entre determinadas medidas y la discontinuación del uso de un método anticonceptivo.

Resultados: La discontinuación del uso de anticonceptivos se diferenció de acuerdo con el método utilizado: casi el 70% de las usuarias de inyectables habían dejado de utilizar su método escogido después de un año de uso, en comparación con el 34% de las usuarias de los DIU y el 10% de las que usaban implantes hormonales. Antes de iniciar el uso anticonceptivo, las mujeres indicaron un promedio de cinco días de sangrado durante su ciclo menstrual. Durante los primeros seis meses de uso, las usuarias de los DIU presentaron un promedio de seis días de sangrado durante cada ciclo menstrual; las que usaban inyectables o implantes tuvieron un promedio de 11–12 días de sangrado. En los modelos multivariados, cada día adicional de sangrado estuvo significativamente relacionado con un aumento del 2–4% de discontinuación de uso, dependiendo del tipo de método utilizado. Entre las usuarias de los DIU, las mujeres cuyos cónyuges sabían que habían visitado una clínica para iniciar el uso de un método anticonceptivo fueron menos propensas que las otras a discontinuar el uso del método (razón de riesgo, -1,9). La edad estuvo negativamente relacionada con la discontinuación del método por parte de las usuarias del implante hormonal.

Conclusión: La consejería acerca del sangrado y otros efectos secundarios debe ser concebida para satisfacer los contextos personales de la mujer y sus experiencias con los anticonceptivos.

RÉSUMÉ

Contexte: La recherche a largement documenté le rapport entre les effets secondaires menstruels des contraceptifs et leur abandon. Peu d'études ont cependant cherché à identifier les facteurs

de prédisposition des femmes à l'abandon pour cause de saignement. Cette information est importante si l'on veut habiliter les prestataires du planning familial à mieux aider les femmes et les couples dans leur choix de méthodes appropriées et dans l'assurance de leur succès.

Méthodes: Quarante-huit femmes participant à six discussions de groupe ont décrit leur expérience du stérilet, de l'implant hormonal et de l'injectable trimestriel. Deux cent cinquante-neuf femmes pratiquant l'une de ces méthodes pour la première fois ont ensuite été suivies jusqu'à 18 mois afin de déterminer les tendances de saignement menstruel et les perceptions du changement menstruel dans le temps. L'examen des associations entre certaines mesures et l'abandon de la méthode a été effectué par analyse multivariée.

Résultats: L'abandon du contraceptif s'est avéré différent suivant la méthode: près de 70% des utilisatrices de l'injectable avaient abandonné leur méthode choisie au terme d'un an, par rapport à 34% des utilisatrices du stérilet et à 10% de celles de l'implant. Durant les six premiers mois d'usage, les utilisatrices du stérilet ont déclaré une moyenne de six jours de saignement par cycle, par rapport à 11 ou 12 jours pour l'injectable et l'implant. Dans les modèles multidimensionnels, chaque jour de saignement supplémentaire s'est révélé significativement associé à une hausse de 2 à 4% du taux d'abandon, selon le type de méthode. Parmi les utilisatrices du stérilet, les femmes dont le conjoint savait qu'elles s'étaient rendues dans une clinique en vue de l'adoption d'une méthode sont apparues moins susceptibles que les autres d'en abandonner la pratique (rapport de probabilités, 1,9). L'âge s'est également révélé significativement associé à un taux d'abandon moindre parmi les utilisatrices de l'implant.

Conclusions: Le conseil relatif au saignement et aux autres effets secondaires doit être adapté aux circonstances personnelles et aux expériences contraceptives des femmes.

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Author contact: btolley@fhi.org