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Effectiveness of an Online Natural Family Planning Program for Breastfeeding Women

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EFFECTIVENESS OF AN ONLINE NATURAL FAMILY PLANNING PROGRAM FOR BREASTFEEDING WOMEN

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ABSTRACT

OBJECTIVE

To analyze the effectiveness of an online, nurse-managed natural family planning (NFP) program among breastfeeding women and subgroups of these women.

DESIGN

Longitudinal comparative cohort study.

SETTING

A university-based online NFP education program and menstrual cycle charting system.

PARTICIPANTS

Women (*N* = 816) with a mean age of 30.3 years (standard deviation = 4.5) who registered to use the online NFP system and indicated they were breastfeeding.

METHODS

Participants tracked their fertile times with an electronic hormone fertility monitor (EHFM), cervical mucus monitoring, or both. All unintended pregnancies were evaluated by professional nurses.

RESULTS

The correct use pregnancy rates were 3 per 100 users over 12 cycles of use, and typical rates were 14 per 100 at 12 cycles of use. At 12 cycles of use, total pregnancy rates were 16 per 100 for electronic hormone fertility monitor users (*n* = 380), 81 per 100 among mucus-only users (*n* = 45), and 14 per 100 for electronic hormone fertility monitor plus mucus users (*n* = 391).

CONCLUSION

Use of a nurse-managed online NFP program for women can be effective to help women avoid pregnancy while breastfeeding, especially with correct and consistent use.

KEYWORDS
Breastfeeding, fertility awareness methods, natural family planning

For women who breastfeed their infants, it is often difficult to use natural family planning (NFP) to prevent pregnancy from the birth of the neonate until the resumption of regular ovulatory menstrual cycles (Arévalo, Jennings, & Sinai, 2003; Sinai, & Cachan, 2012a). During this time, women who use NFP often become pregnant without intention. This is a problem, because spacing of childbirth is healthier for the mother and infant and because there can be serious medical and psychological reasons for not becoming pregnant again soon after childbirth (Berens, Labbok, & Academy of Breastfeeding Medicine, 2016; Setty-Venugopal & Upadhyay, 2002).

In NFP, natural markers of fertility such as cervical mucus changes, basal body temperature changes, and/or hormonal markers are used to estimate fertility, and intercourse is avoided during the estimated fertile phase. Use of NFP is difficult during the breastfeeding transition to fertility because (a) there is no menstruation to indicate the beginning and end of a menstrual cycle, (b) the traditional

markers of fertility do not always coincide with hormonal indicators of fertility, (c) women often ovulate before their first menses, and (d) the first three to six menstrual cycles are often long and irregular in length (Tommaselli et al., 2000).

The hormone prolactin is the major hormone responsible for the suppression of ovulation during breastfeeding. Prolactin inhibits the production of gonadotropin-releasing hormone from the hypothalamus and decreases the production of follicle-stimulating hormone and luteinizing hormone (LH) by the anterior pituitary (McNielly, 2001). As a result, follicular development, estrogen production, and ovulation are suppressed. The frequency and duration of suckling by the infant influences prolactin levels and the length of ovulation suppression (Li & Qui, 2007). However, there is significant follicular growth and a rhythmic rise and fall of the reproductive hormones (estrogen and progesterone) during the postpartum breastfeeding amenorrhea cycle and considerable variability of length and delay in ovulation for the first three to six menstrual cycles postpartum (Velazquez, Creus, et al., 2006; Velazquez, Trigo, Creus, Campo, & Croxatto, 2006). This irregularity in length and delay of ovulation makes use of NFP difficult during postpartum breastfeeding.

Only a few researchers have reported on the effectiveness of NFP methods during the breastfeeding transition, and most did not use modern methods to determine pregnancy rates (Brown, Harrisson, & Smith, 1985; Hatherley 1985; Howard & Stanford, 1999; Labbok et al., 1991). Authors of these studies showed that use of NFP postpartum resulted in high unintended pregnancy rates, and use of NFP may even have increased the pregnancy rate. There are two fairly recent studies of effectiveness with a modern method of NFP (Bouchard, Fehring, & Schneider, 2013; Sinai & Cachen, 2012b). Sinai and Cachen (2012b) reported a 6-month pregnancy rate among ovulating postpartum women who used a calendar-based bridge method. Bouchard et al. (2013) studied postpartum breastfeeding and nonbreastfeeding women who used an electronic hormonal fertility monitor (EHFM) to track fertility during the transition to fertility over 12 months of use and a special protocol (Fehring, Barron, & Schneider, 2005). There are no comparison studies of NFP methods or comparison of natural fertility indicators during the postpartum period.

> Use of natural family planning methods while breastfeeding can be difficult and often ineffective.

Faculty and staff at Marquette University developed a new system of NFP that integrates EHFM with a traditional marker of fertility (i.e., cervical mucus changes) and have conducted a number of studies to determine the effectiveness of this system of NFP called the Marquette Model (MM; Fehring, Schneider, & Barron, 2008; Fehring, Schneider, Barron, & Raviele, 2009; Fehring, Schneider, & Raviele, 2011; Fehring, Schneider, Raviele, & Barron, 2007). In 2008, an Internet-based, nurse-managed educational program was initiated to provide access to the MM of NFP. This online program provides information on NFP, an online menstrual cycle charting system, protocols for special reproductive circumstances (e.g., postpartum breastfeeding), and daily online consultation through forums and private messaging. More than 10,000 women have used this online system of NFP, represented by all 50 states and five foreign countries. More than 50% of these women indicated that they were breastfeeding in the postpartum period. A number of studies were conducted to test the effectiveness of this online system of NFP among women with regular menstrual cycles, postpartum breastfeeding women, women in perimenopause, and women who wished to achieve pregnancy (Bouchard et al., 2013; Fehring & Mu, 2014; Fehring et al., 2013; Mu & Fehring, 2014).

The online MM postpartum breastfeeding protocol was recently modified to include instructions for the first six cycles postpartum and for a newer version of the EHFM (see Supplemental Appendix S1). Hundreds of postpartum breastfeeding women have now used the MM postpartum breastfeeding protocols. The purpose of this study was to evaluate the effectiveness (i.e., correct use and total pregnancy rates) of our postpartum breastfeeding protocols among women seeking to avoid pregnancy. A secondary purpose was to compare the pregnancy rates among breastfeeding women who use the EHFM, cervical mucus monitoring (CMM), or both to estimate their fertility status while breastfeeding.

METHODS

DESIGN AND PARTICIPANTS

This was a prospective, longitudinal (12 menstrual cycles), descriptive, and comparative cohort study to determine the effectiveness of an online NFP program for women who were breastfeeding. The participants (*N* = 816) were all breastfeeding women who registered in the Marquette online program from April 2008 through June 2015 and were using the EHFM, CMM, or both to track fertility and to avoid pregnancy. At registration on the MM Web site, women indicated in an online profile whether they were breastfeeding or not. The participants were from all 50 states and five foreign countries. Participants from the Bouchard et al. (2013) study were included if they continued to contribute data (i.e., menstrual cycles) and pregnancy outcomes while breastfeeding since 2013.

PROCEDURE

Users of the MM NFP Web site are presented with an online consent form and, if they agree to study participation, are linked to a detailed profile form. After registration, each user has access to an online charting system, discussion forums, and women's health information. Professional MM nurses provide personal instructions and guidance to users who post a question in online discussion forums or a private messaging section of the Web site. Institutional review board approval for this study was obtained through the Marquette University Office of Research Compliance.

The MM has an online menstrual cycle charting system that includes space to record levels of menstrual bleeding, the results of the EHFM, and daily cervical mucus ratings (see Figure 1). In the charting system, a simple numeric code is used for menses scoring and an alphabetic code is used for rating the biological signs of fertility. In the MM system, bleeding is recorded as 1 = *light,* 2 = *medium,* or 3 = *heavy.* The EHFM rates fertility levels as *low, high,* or *peak.* When the EHFM detects no rising levels of estrone-3-glucuronide (E3G) in the first voided morning urine, the monitor indicates a low fertility reading, when E3G rises significantly from baseline the monitor indicates high fertility, and when the LH hormone surge is detected the monitor indicates peak fertility. The EHFM is initiated when a button on the monitor or on the touch screen is pushed on the first day of menses. The monitor keeps track of the cycle day and requests 10 to 20 daily urine tests per cycle. When the monitor requests a test, a test strip saturated with a woman's urine is clipped into the monitor.
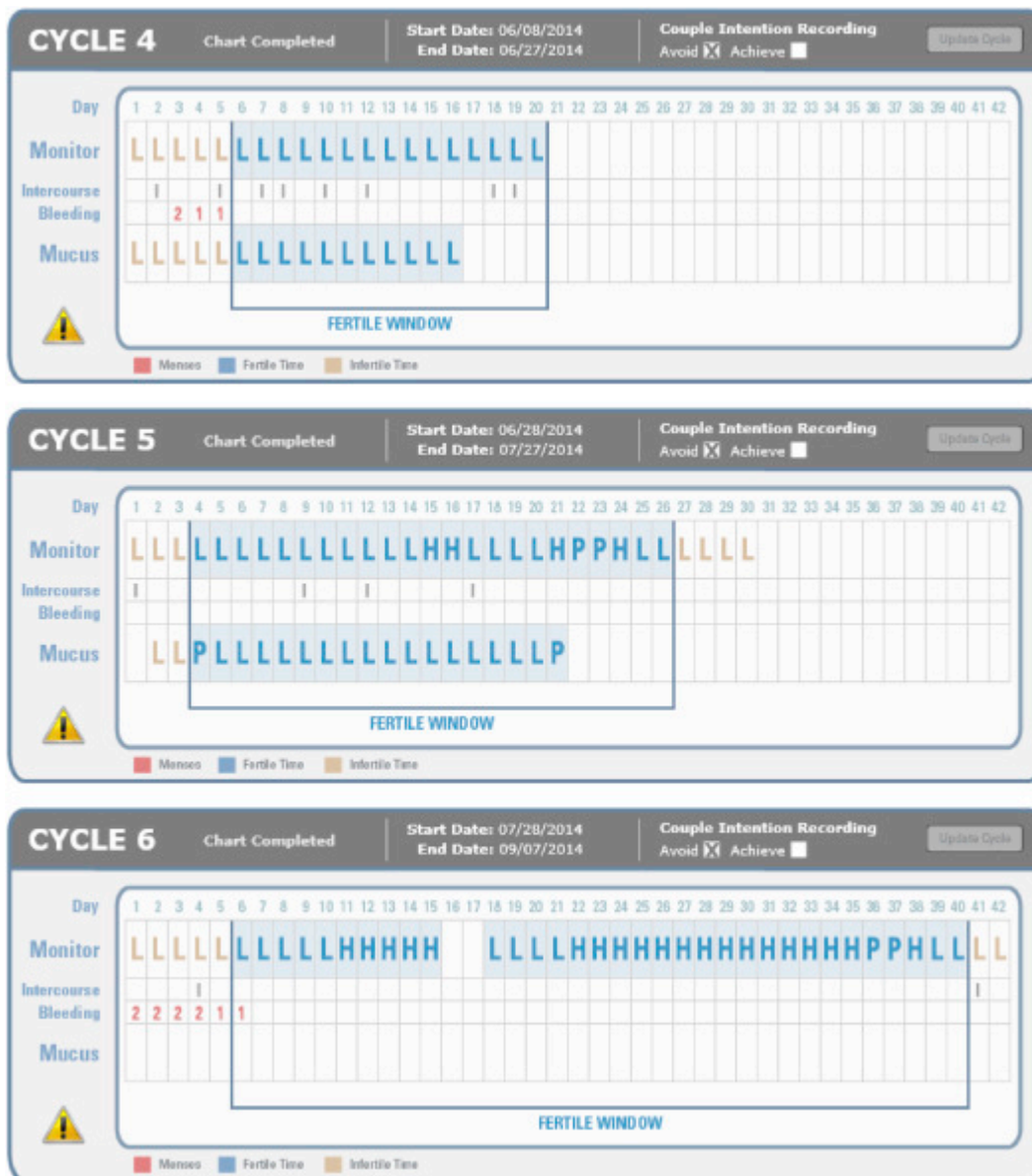
Figure 1. Example Marquette Model menstrual cycle charting system showing the postpartum transition to fertility: L indicates low fertility; H indicates high fertility and a rise in estrogen, and P indicates peak fertility and detection of luteinizing hormone surge (Cycle Numbers 4 and 5 are the end of postpartum amenorrhea, with the first luteinizing hormone surge on Days 22 and 23 in Cycle 5. Cycle 6 is first cycle postpartum with delay in the luteinizing hormone surge until Day 36).

In a past study of the accuracy of the EHFM, we showed that the monitor was 98.8% accurate in detecting the LH surge in 169 of 171 menstrual cycles from 88 women, in agreement with a quantitative radioimmunoassay for LH (Fehring, Raviele, & Schneider, 2004). Other researchers showed that with 90 women who used the EHFM in 352 cycles with an LH surge, the first day of high fertility (i.e., the day of the first rise in E3G) was 3.01 ± 2.33 days before the LH surge (May, 2001; Unipath, 2001). We also showed that the peak day of cervical mucus observations correlates well with the LH surge (Fehring, 2002). For the current study, cervical mucus observations were graded as *low, high,* and *peak* based on a woman's daily observations. The *low, high,* and *peak* grading paralleled the monitor readings of fertility.

Postpartum breastfeeding women are instructed to avoid intercourse on high and peak estimated days of fertility and 3 full days past the last peak observation. (See Supplemental Appendix S1 for MM protocol instructions). When menses returns, they are asked to consider themselves fertile from Day 10 of the first menstrual cycle until 3 full days past the last peak of the monitor or last day of peak-rated cervical mucus. The beginnings of the estimated first day of fertility for the next five menstrual cycles are tapered to begin on Days 9, 8, 7, and 6, respectively, and again to end three full days past the last peak reading. The tapering reflects the postpartum delay in the LH surge and day of ovulation that is experienced in the first six cycles postpartum. When a woman has six cycles completed after cessation of breastfeeding, she is asked to follow regular cycle instructions.

All pregnancies were analyzed by two MM professional nurses who evaluated an online self-administered pregnancy evaluation form and menstrual cycle charts to classify each pregnancy. The pregnancy evaluation form includes information to record how women determined they were pregnant, questions about intercourse on fertile days, the women's ratings about whether their pregnancies were intended, and whether they planned to continue to use NFP. The menstrual cycle charting system generates an automatic alert for a potential pregnancy when the luteal phase (i.e., the post-peak phase) of the menstrual cycle is greater than 16 days in length. Pregnancies were classified based on couples' correct use of the protocol, consistent charting, couples' decisions to avoid or achieve a pregnancy (determined before beginning a new menstrual cycle chart), and couples' comments found in the online pregnancy evaluation. A pregnancy was classified as *correct use* when the participant (woman user) experienced an unintended pregnancy with correct use of the protocol, had consistent charting, and had no recorded intercourse on estimated fertile days. Pregnancies were classified as *incorrect use* when there was inconsistent use of the protocol, inconsistent charting, and/or when intercourse was recorded during the estimated fertile phase. The participants produced 3,818 correct use menstrual cycles, 1,661 incorrect use cycles, and 5,485 total menstrual cycles that were used in the analysis of pregnancy rates.

ANALYSIS OF DATA

Data from the online charts was analyzed using SPSS version 22. Correct use pregnancy rates were based only on correct use menstrual cycles, and total pregnancy rates were based on correct use and incorrect or inconsistent use menstrual cycles and calculated over 12 menstrual cycles of use by survival analysis to produce survival rates (SR) and standard errors (*SE*; Kaplan-Meier). The time from birth until the first ovulation and menses was considered and counted as one cycle of use. This first cycle of long amenorrhea could last from months to more than a year but was calculated as one cycle of use because there was only one ovulation during that time period and only one chance of pregnancy. We also calculated differences in the frequency of total number of pregnancies among the three fertility indicator groups over 12 months of use by chi-square analysis with a probability of .05.

> Researchers at the Marquette Institute for Natural Family Planning developed protocols that integrate hormone monitoring and an online program to help breastfeeding women prevent pregnancy.

RESULTS

DEMOGRAPHICS

There were 816 women registrants who indicated that they were breastfeeding and were included in the analysis. The average age of these participants was 30.28 years old (SD = 4.51) with a mean of 2.97 children (SD = 1.73) and a mean of 5.57 years of marriage. All were married by time of pregnancy; 12% were engaged when they registered. Most were of the Catholic faith (83.2%); most were White (67.5%) and were very educated, with 37.0% having more than a college degree (see Table 1 for more demographic details).

Table 1. Characteristics of Breastfeeding Participants (*n* = 816)

Characteristic	*M* (*SD*)
Age in years	30.3 (4.5)
Years married	5.6 (4.5)
Weight in pounds	150.0 (32.2)
Pregnancies, *n*	3.4 (2.1)
Living children, *n*	2.9 (1.7)
	n (%)
Ethnicity, *n*	
European American	551 (67.5)
Hispanic American	27 (3.3)
Native American	8 (1.0)
African American	8 (1.0)
Asian American	10 (1.2)
Other	34 (4.2)
Missing system	178 (21.8)
Religion, *n*	
Catholic	679 (83.2)
Protestant	31 (3.8)
Muslim	1 (0.1)
Other	105 (12.9)
Education level	
8 years or less	47 (5.9)
9–12 years	15 (1.8)
13–14 years	45 (5.5)
15–16 years	249 (30.5)
17+ years	302 (37.0)
Missing data	158 (19.4)

CORRECT AND TYPICAL USE PREGNANCY RATES FOR ALL PARTICIPANTS

There were a total of seven correct use unintended pregnancies among the 816 participants over 12 cycles of use. This resulted in a 12-cycle correct use pregnancy rate of 3 per 100 users (SR = .97, *SE* = 0.009).

There were a total of 62 pregnancies among the 816 participants over 12 menstrual cycles of use, 36 in the first six menstrual cycles. The 12-cycle pregnancy rate was 14 per 100 users (SR = .86; *SE* = 0.019). Thirteen of these pregnancies were due to couples' conscious departure from the rules for avoiding pregnancy as they indicated in their pregnancy evaluation form. However, their original intention at the beginning of the menstrual cycle was to avoid pregnancy. Only six of the unintended pregnancies occurred during the postpartum amenorrhea, that is, what we counted as the first menstrual cycle of analysis.

COMPARISON OF CORRECT AND TOTAL PREGNANCY RATES AMONG SUBGROUPS

There was no difference in the correct use pregnancy rate at 12 cycles of use between the participants who used the EHFM alone (*n* = 380) and those who used the EHFM plus mucus observations (*n* = 391). The correct use pregnancy rate was 3 per 100 (SR = .97, *SE* = 0.009) at 12 cycles of use for both subgroups. There were no correct use unintended pregnancies among the mucus-only participants (*n* = 45) at 12 cycles of use.

The 12-cycle typical use pregnancy rates among the three fertility indicator groups (i.e., the EHFM, the mucus, and the EHFM plus mucus groups) by survival analysis were 16, 81, and 12 per 100 users, respectively (see Table 2). There was a significant difference in the frequency of unintended pregnancies between the two EHFM groups and the cervical mucus–only group at 12 cycles of use. A chi-square analysis of frequency of unintended pregnancies showed a significant difference between the EHFM and the CMM-only group (χ^2 = 9.17, *p* = .002) and between the EHFM plus CMM and the CMM-only group (χ^2 = 11.89, *p* = .001).

Table 2. Typical Use Unintended Pregnancy Rates Per 100 Users Over 12 Menstrual Cycles of Use by Fertility Indicators

Fertility Indicator	Pregnancy Rate	Standard Error
EHFM (fertility monitor) (*n* = 380)		
6 cycles	6	0.016
12 cycles	16	0.030
Cervical mucus monitoring (*n* = 45)		
6 cycles	23	0.096
12 cycles	81	0.153
EHFM and cervical mucus monitoring (*n* = 391)		
6 cycles	6	0.015
12 cycles	12	0.024

Note. EHFM = electronic hormone fertility monitor.

DISCUSSION

The Marquette online NFP program correct use pregnancy rates are very low among breastfeeding women, that is, a pregnancy rate of 3 per 100 over 12 cycles of use. The total or typical use MM postpartum breastfeeding effectiveness also compares well with other methods of NFP. For example, a standardized mucus-only postpartum breastfeeding method (Howard & Stanford, 1999) had a total pregnancy rate of 24 per 100 at 12 months of use but a correct use pregnancy rate of near 0 per 100 users. The Howard and Stanford rates are much greater than the MM rate of 14 over 12 cycles of use and, in particular, the 12 pregnancies among participants who used the EHFM and mucus observations. We found a pregnancy rate of 81 per 100 over 12 cycles of use with the mucus-only participants. This rate is rather high and might be a reflection of the small number (n = 45) of mucus-only users. Bouchard et al. (2013) found a correct use pregnancy rate of 2 per 100 and total pregnancy rate of 8 per 100 with an earlier version of the MM NFP postpartum protocol, which compares well with the current study results. However, Bouchard et al. included only postpartum women who were transitioning from amenorrhea to fertility, whereas in this study we included many breastfeeding women who were currently fertile, ovulating, and experiencing menstrual cycles. The length of amenorrhea will deflate the unintended pregnancy rate. Another recent study of a fixed calendar-based method of NFP reported a typical use pregnancy rate of 11.2 per 100 women at 6 months of use (Sinai and Cachen, 2012b), compared with our current study result of 6 pregnancies per 100 over 6 months with use of the EHFM.

Another comparison with postpartum NFP methods can be with women who use the lactational amenorrhea method (LAM) to avoid pregnancy. LAM requires exclusive breastfeeding, being within 6 months or less postpartum, and no return of menses. LAM, like NFP, is considered a natural method of child spacing. When LAM criteria are used correctly the 6-month LAM pregnancy rate is around 2 to 5 per 100 women, and at 12 months it is 4 per 100 users (Augustin, Donovan, Lozano, Massucci, & Wohlgemuth, 2014; Valdes, Labbok, Pugin, & Perez, 2000; World Health Organization Task Force, 1999). For postpartum breastfeeding women who use the MM system of NFP correctly, which includes special protocols, the pregnancy rate is only 1 per 100 at 6 cycles of use, even though many of the MM postpartum women are ovulating and have returned to fertility. LAM includes only participants who are in postpartum amenorrhea, and pregnancy rates are calculated by months of use. Because postpartum amenorrhea can last a long time, this means of calculating pregnancy rates will decrease actual rates. With the MM, the postpartum amenorrhea is only counted as one cycle of use, not many months of use.

Typical use pregnancy rates of the MM do not compare well with use of hormonal or intrauterine device contraceptive methods. The unintended pregnancy rates with modern contraceptive methods, and, especially the long-acting reversible methods, are very effective (Trussell, 2011). However, there are few studies of the effectiveness of contraceptive methods during postpartum breastfeeding. Authors of one study showed a pregnancy rate of 1.2 per 100 over 11 months of use with a progestin-only contraceptive method (Dunson, McLaurin, Grubb, & Rosman, 1993), and another group showed a pregnancy rate of 1.5 per 100 with use of a progestin-release vaginal ring and only 0.5 per 100 with a copper intrauterine device (Sivin et al., 1997). Regardless, our study was focused on women who chose to use natural methods of child spacing for health, religious, or other reasons.

An indication of the difficulty of a family planning method is the difference between correct use and total use pregnancy rates. The greater the gap between the two rates, the more difficult the method is to use. This is the usual problem with behavioral methods and, in particular, NFP methods that require periodic abstinence. The differences between correct and typical use rates among postpartum breastfeeding women can also be due to the variable return to fertility, the often confusing natural signs of fertility during the postpartum period, and the variability of the menstrual cycle during breastfeeding. The gap between correct use and total pregnancy rates in the MM postpartum protocol is not substantial at six cycles of use, that is, a difference of 1 to 6 unintended pregnancies. The gap between correct and typical use pregnancy rates widens at 12 cycles of use and varies around 8 to 12 pregnancies per 100 users. However, the increased pregnancy rates over time most likely reflect a lowering of motivation to avoid pregnancy. In our study, 18 of the pregnancies were due to conscious departure from the rules to avoid pregnancy and having intercourse on estimated high and peak fertile days. Fehring, Schneider, Barron, and Pruzynski (2013) found that there were significantly greater pregnancy rates among users of the MM of NFP when their motivation to avoid pregnancy decreased. In future postpartum breastfeeding effectiveness studies, researchers would do well to have motivation levels monitored for each menstrual cycle of use.

> Especially with correct use, electronic hormone monitoring and daily online support by professional nurses can be effective to help breastfeeding women use natural methods to prevent pregnancy.

The main strength of our study was that it was reflective of real-world use of the MM postpartum protocol, giving true effectiveness rates, rather than the more controlled conditions of a randomized controlled trial. The current Web site for the MM has special protocols that incorporate the use of the EHFM that postpartum women seek to have a more objective means to track fertility. More than 50% of the women who register into the MM Web site and charting system are postpartum breastfeeding. Besides the selection bias of having self-selected well-educated women who have access to the Internet, a limitation of the study was that there was no individual scheduled follow-up reminders or ongoing assessment of use with our NFP education and charting system. Furthermore, the only teaching was through forums and private messaging initiated by the user. Like the effectiveness study with regularly cycling women conducted by Fehring and Schneider (2017), it is likely that intercourse and intercourse with use of condoms during the estimated fertile phase were underreported. It is possible that pregnancy was underreported, but this is unlikely, because it would have been reflected in the charting system. Finally, another weakness was that the online charting system and automatic calculations of the fertile phase for the online MM Web site were not designed for breastfeeding women in amenorrhea. Women were instead creating "artificial" cycles during the long amenorrhea and recording these in the charts used for regularly cycling women (see Figure 1). The automatically calculated fertile window represented on the online chart did not actually reflect the MM postpartum protocol rules during amenorrhea.

Future planned studies include comparisons of online pregnancy rates between women who receive in person instructional support and women who receive a combination of online support and distance education opportunity, such as Desire to Learn, Skype, Go to Meeting formats. We are currently developing a fertility-monitoring smart phone application that syncs to a newly designed Web site so that charting can be done on any device seamlessly. We are also testing the use of a self-test urine progesterone test strip that is designed to confirm ovulation. This progesterone test to confirm

ovulation might be of particular benefit during postpartum transition to fertility to confirm when ovulation occurs (Ecochard et al., 2013). Finally, we continue to study the physiologic parameters of the menstrual cycle and their variations in the transition to fertility and during the first six menstrual cycles postpartum. The more we understand the physiologic variability and patterns during the return to fertility, the better we can provide effective protocols to help women track fertility and avoid pregnancy during this transition.

CLINICAL NURSING IMPLICATIONS

The United States Breastfeeding Committee (2010) has developed core competencies for health care professionals to support and promote evidence-based breastfeeding research that is family-centered and culturally sensitive. It is evident that future commitment to support breastfeeding is multidimensional and includes better methods of NFP. Sexual and reproductive health issues between the couple during the postpartum breastfeeding stage cannot be ignored. Professional nurses, especially advanced practice nurse practitioners, are seen as trustworthy sources by women such as the breastfeeding mothers in our study. However, only 15% of women actually feel comfortable enough to initiate a discussion about sexuality during an encounter with a nurse (Convery & Spatz, 2009). The Marquette Institute for NFP has the combined features of having knowledgeable professional nurses with a unique online full-service NFP system. We have developed a virtual environment overseen by knowledgeable clinicians that enhances the ability of participants to ask intimate personal questions without fear of loss of anonymity and as such, helps to decrease the feeling of isolation. These characteristics of our program may have positive effects on outcomes as described by Bauerle Bass (2003).

We found evidence that the MM online NFP educational program and our protocols are effective in helping postpartum breastfeeding women avoid pregnancy with correct and consistent use. Typical use pregnancy rates are still rather high, especially during the first six menstrual cycles postpartum. To help women and couples cope with long and variable menstrual cycles and their motivation to avoid pregnancy during this time period is a challenge for NFP health care providers. More research is needed to continue to make the transition to fertility and beyond more secure in using natural methods of family planning.

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SUPPLEMENTARY MATERIAL

Supplemental Appendix S1.

Supplemental Appendix:
Marquette Institute for Natural Family Planning Postpartum Breastfeeding Protocols

For women who are using the older "original" hormonal fertility monitor:

Assuming that you have not yet ovulated and not had your first postpartum menses/period:

1. Trigger the Clearblue Easy Fertility monitor "M" button and fast forward to day 5—the next day the monitor will ask for a test.

2. Test urine every day with a test strip and monitor and avoid intercourse on high and peak days (of the monitor) and three full days past the second peak day.

3. Retrigger and fast-forward the monitor to day 5 on the morning of each 10th day of testing (i.e., right after you test your tenth day urine).

4. Keep the 10-day routine until first ovulation (peak) followed by your first menses/period.[*]

5. See first 6 cycles postpartum instructions when you have your first period postpartum.

   [*]If you do not get your first menses/period within 10 days of the second peak on the monitor, resume the 10-day protocol series. The monitor automatically records a second peak after the first followed by a high and then low reading, i.e., PPHL. There is no need to test on those days as they are automatic.

6. When menses returns, reset the monitor and erase the memory (erase the memory for all 6 cycles postpartum). Day 1 is the first day of menses. Begin testing when the monitor asks for a test on day 6.

7. Fertility begins on day 10 of the 1st cycle after the return of menses, day 9 in the 2nd cycle, day 8 in the 3rd cycle, day 7 in the 4th cycle, and day 6 from the 5th cycle onward. However, if the monitor records a high reading prior to these days, then fertility starts on the day of the first high reading.[**]

8. (Optional) Beginning on day 6 in the first menstrual cycle postpartum, women may do a second test for the LH surge in the evening with a separate LH test kit.

   [**]Please note that fertility ends three full days past the second Peak on the monitor, i.e., fertility begins on day 10 (unless you have high reading on the monitor) and continues through three full days past the second peak on the monitor. If the monitor goes to low before the peak, that means that it missed the LH surge and automatically went to low. That low is not to be used.

For women who are using the new touch screen hormonal fertility monitor:

1. Set a new cycle on the monitor to begin the first 10-day cycle advance to day 4.

2. Press >> select cycle setup (follow prompts to set up a new cycle). > Choose the earliest date when prompted for when period started. > Choose any time before noon (this will prevent the monitor from adding another day of abstinence.) > Set preferred testing window.

3. The next morning (day 5) turn on monitor (note—the monitor will not request a test this day; consider this day fertile).

4. Turn monitor on the next morning, which will be day 6. This will be your first testing day; test for a total of 10 days.

5. Reset the monitor on day 15 (10th day of testing) after you have tested your urine.

    Avoid intercourse on High and Peak readings on the monitor AND 3 full 24-hour days past the second peak day.

    Keep the 10-day routine until the first peak followed by your first menses/period.

    If you do not get a menses ten days after the last peak reset the monitor to a new cycle and begin the 10-day test protocol again.

    If you had a menses and are not breastfeeding stop here and follow regular cycle instructions.

    If you had a menses and are still breastfeeding follow the instructions below.

    Fertility begins on day 10 of the first cycle after the return of menses BUT—if the monitor reads a high day before the fertile window (which is based on instructions in #3 below) then fertility starts on the first day of a high reading.

    If you don't get a peak by the 19th day of testing in your first cycle contact a MM teacher.

    The start of your fertile window for the following cycles are:
    Day 9 in the second cycle,
    Day 8 in the third cycle,
    Day 7 in the fourth cycle,
    Day 6 in the fifth.

    Avoid intercourse on High and Peak readings on the monitor AND 3 full 24-hr days past the second Peak Day.

    Optional but useful: Beginning on day 6 of the first menstrual cycle postpartum women may do a second test for the LH surge. We suggest a LH test kit. Contact your MM teacher for more instructions or questions.

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