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What Nurses Should Know About Natural Family Planning

Amy J. Trent, RN, BSN, Kathleen Clark, RN, PhD, FNP

Two common natural family planning (NFP) methods are the ovulation method based on characteristics of cervical mucus and the symptothermal method based on changes in cervical mucus, basal body temperature, and the cervix. Both methods are effective when used correctly. Nurses should understand the principles of NFP and introduce these methods in discussions of family planning options. Interested clients should be referred to a certified NFP instructor for education and supervision. *JOGNN, 26,* 643–648; 1997.

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Some say couples who use natural family planning are called "parents." This comment implies that natural family planning (NFP) is an ineffective method of avoiding pregnancy. However, when used correctly by motivated couples, NFP is reported to be 97–99% effective in avoiding pregnancy (Dorairaj, 1991; European Natural Family Planning Study Groups, 1993; Fehring, Lawrence, & Philpot, 1994; Frank-Herrmann et al., 1991; World Health Organization, 1981b).

Despite the high method or theoretical effectiveness of NFP, it is not widely used for family planning. This may be due, in part, to a lack of knowledge regarding the different NFP methods. Stanford, Lemaire, and Fox (1994) suggested that most women are not familiar with NFP methods, with reported awareness levels of 43% for the basal body temperature method, 30% for the mucus method, and 2% for the symptothermal method. However, the same study found that, given correct information, 43% of the respondents reported they were interested in learning more about NFP, 24% reported they were likely to use NFP to avoid pregnancy, and 32% reported they were likely to use NFP to achieve pregnancy.

Although NFP may not be accepted by all clients, it may be the best method for some couples and should be included in the initial discussion of family planning options. Nurses who often are responsible for family planning education need to understand NFP methods and recognize characteristics of clients who could successfully use such a method. Although NFP is not ideal for adolescents or women with multiple partners (NFP does not provide protection against human immunodeficiency virus [HIV]) or other sexually transmitted diseases), NFP is an effective method for people in long-term monogamous relationships. This article presents a summary of two NFP methods, their effectiveness, characteristics of NFP users, and sources for client referral.

Fertility Awareness

Natural family planning is any method of birth regulation in which a woman is aware of the signs and symptoms of fertility during her menstrual cycle and uses that information either to avoid or achieve pregnancy. All NFP is based on the premise that there is an approximate 5- to 13-day fertile time during the menstrual cycle that can be recognized by observation of physiologic events, such as changes in the cervix and cervical mucus and elevations in body temperature (Billings, 1987; Kippley & Kippley, 1996; World Health Organization, 1983).

This fertile time reflects viability of the ovum and sperm. In general, ovulation occurs only once during a menstrual cycle, and the egg is viable for about 24 hours. If a second ovum is released, it will occur within 24 hours of the first (Billings, 1987;

Kippley & Kippley, 1996). Cervical mucus provides a favorable environment for sperm in the vagina, acts as a transport medium for sperm, biochemically nurtures and supports sperm, and stores sperm until ovulation occurs (Katz, 1991). Although the ovum is viable only for 24 hours after ovulation, sperm are viable for approximately 3 days, which means intercourse 3 or more days before ovulation could result in pregnancy.

Although there are several types of NFP, the ovulation method and the symptothermal method are the two methods used most commonly. Ovulation models teach women to recognize, chart, and interpret their cervical mucus patterns to identify the fertile time (Billings, 1987). Symptothermal models combine the identification of cervical mucus changes with cross-checks of basal body temperature, cervical changes, and secondary signs of ovulation (Kippley & Kippley, 1996). These physiologic functions must be understood before clients can correctly use NFP.

Changes in Cervical Mucus

The amount and quality of cervical mucus changes throughout the menstrual cycle. Consider the first day of menses as Day 1 of an average 28-day cycle. After about 5 days of menses, there usually is a sensation of dryness for approximately 3–4 days in which no mucus is detected. Dryness is followed by about 3 days of viscous, sticky, tacky, and/or cloudy white or yellow mucus called nonpeak mucus or less fertile type mucus. This mucus breaks apart rather than stretches between fingers. The observation of this mucus marks the beginning of the fertile time (Billings, 1987; Kippley & Kippley, 1996).

As estrogen levels rise, the cervical mucus increases in amount and becomes clear, watery, thin, stretchy, and thready (Moghissi, 1992). This produces a sensation of wetness or lubrication at the vulva and slipperiness on wiping for about 3 days (World Health Organization, 1983). This type of mucus, which has a raw egg-white quality called *spinnbarkeit,* is most favorable to sperm (Overstreet, Katz, & Yudin, 1991) and is called peak mucus or more fertile type mucus (Billings, 1987; Kippley & Kippley, 1996). The raw egg-white quality of mucus or the feeling of wetness is more important than the quantity of mucus present in determining fertility because it appears about the time of ovulation and can easily be penetrated by sperm.

The last day of the peak mucus is designated as the peak day (PD), which occurs near the day of ovulation (Billings, 1987; Kippley & Kippley, 1996; World Health Organization, 1983). After the PD, the mucus begins to dry up, becoming tacky again or absent, and producing a sensation of dryness at the vulvar region. According to the World Health Organization (1983), the probability of pregnancy is greatest (66.7%) on the peak day but decreases to 8.9% three days after the peak day (PD + 3). The risk of pregnancy 4 or more days before the peak day (PD − 4) depends on the quality of the mucus present. If nonpeak mucus is observed, the pregnancy risk is 2.4% but increases to 35.3% in the presence of peak mucus. The researchers found a low proportion of pregnancies (0.4% per cycle) occurring outside the fertile time (World Health Organization, 1983).

Several factors may alter the recognition or characteristics of cervical mucus. Mucus may be blood-tinged about the time of ovulation and may be confused with a true period (Billings, 1987; Kippley & Kippley, 1996). Also, women discontinuing oral contraceptives may have an indistinguishable mucus pattern for the first few cycles until the hormonal residue is cleared from the body. The hormonal residue continues to thicken mucus, obscuring the identification of the peak day (Kippley & Kippley, 1996). Finally, in women with short menstrual cycles, menses may hide early mucus, making it difficult to identify the onset of the fertile time.

Changes in the Cervix and Basal Body Temperature

About the time of ovulation, the cervix softens and rises slightly as the os dilates (Kippley & Kippley, 1996; Moghissi, 1992), allowing sperm to enter more easily. After ovulation, the cervix firms and lowers as the os closes. The cervix should be palpated gently with clean fingers 2 or 3 times per day to recognize cervical changes.

Basal body temperature (BBT) is used as an indicator that ovulation has occurred. A typical ovulatory cycle reveals a biphasic pattern in which the BBT rises about 0.4°F after ovulation because of increased levels of progesterone (Kippley & Kippley, 1996; Moghissi, 1992). To be an accurate sign of fertility, BBT must be taken at the same waking time each day. This may be difficult for some women, such as nurses, who work rotating shifts. The temperature also is affected by activity, oral intake, illness, inadequate sleep, environmental temperature, and alcohol use. Secondary signs of ovulation include *mittelschmerz* (abdominal pain), increased libido, spotting, and any signs that an individual woman consistently recognizes during the fertile time (Billings, 1987).

Determination of the Fertile Time

For ovulation models, the fertile time lasts from the first day that any mucus is detected until about 4 days after the peak day (Billings, 1987). For symptothermal models, the determination of the fertile time is more flexible. The beginning of the fertile time is determined by cervical mucus observation. The fertile time ends 2–4 days after the peak day and when the BBT has been elevated for 3 days, whichever occurs later. Other cyclical changes, such as changes in the cervix, are used as

cross-checks and may be particularly useful for cases in which the mucus pattern is atypical (Kippley & Kippley, 1996).

Proponents of the ovulation method believe that it is easier to learn than the symptothermal method because it does not confuse a woman with basal body temperature and cervix changes, which are not applicable in the preovulatory phase (Billings, 1987). The ovulation method may be more useful than the symptothermal method for women approaching menopause (Billings, 1987) or those who are breastfeeding (Gross, 1991). In those instances, women may not be ovulating regularly, and mucus would be the first signal of approaching ovulation. Proponents of the symptothermal method believe that the cross-checks make it more reliable than the ovulation method, especially for cases in which the mucus pattern is atypical, such as someone discontinuing the use of oral contraceptives (Kippley & Kippley, 1996).

Women who learn to recognize the signs of fertility may use this information in planning to achieve pregnancy. There are several devices available for ovulation detection, including computerized basal body temperature thermometers, electronic fertility monitors, and chemical and hormonal ovulation detection kits (Fehring, 1991). However, the expense of most devices make them impractical for use in avoiding pregnancy, and they do not provide the woman with as much information as NFP (Fehring, 1990).

Implementing Natural Family Planning

To become proficient in using either the ovulation method or the symptothermal method, a woman must be taught to make external observations of mucus throughout the day. With each trip to the bathroom, the mucus is observed and a decision is made regarding the presence and characteristics of the mucus. At the end of the day, the characteristics of the mucus are recorded. Cervical mucus characteristics are charted, often with different colored stamps that represent fertile and infertile times or by a description of mucus characteristics.

In addition to charting mucus, women using the symptothermal method are taught to take and record basal body temperature and to palpate the cervix for softening and changes in position each day. Clients who learn the symptothermal method may choose to rely most on the sign(s) with which they feel most comfortable in determining the fertile time.

To avoid pregnancy, NFP methods require complete abstinence during the fertile time. Most ovulation models also require abstinence for the first complete menstrual cycle to recognize the presence and characteristics of mucus unaffected by semen. Beginning users of symptothermal models usually are required to abstain from coitus until postovulation infertility during the first two cycles of use. This allows clients to recognize their individual cyclical changes. For both methods, abstinence during menstruation is sometimes recommended because menses may hide early mucus or may be confused with midcycle breakthrough bleeding, which is a highly fertile time. After menses and before the return of cervical mucus, coitus is recommended evenings only and not on consecutive days. This allows a woman to make a full day's observations of mucus unaffected by semen (Kippley & Kippley, 1996).

Teachers of NFP do not advocate use of barrier methods during the fertile time because the addition of spermicidal cream or jelly in conjunction with the barriers may obscure some qualities of the cervical mucus. Conflict exists as to whether the use of barrier methods during the fertile time decreases the rate of unplanned pregnancies (European Natural Family Planning Study Groups, 1993; Frank-Herrmann et al., 1991).

Accurate use of NFP requires detailed instruction specific to the method chosen and supervised monitoring for extended periods of time.

Accurate use of NFP requires detailed instruction specific to the method chosen and supervised monitoring for extended periods of time. There are several ovulation models and symptothermal models. Each model has its own specific rules for determining the fertile time. Therefore, it is recommended that clients be taught by a certified NFP instructor who meets with clients at least monthly for several months. This allows instructors to supervise and help interpret cyclical changes over an extended period of time, as well as to evaluate the clients' understanding of their individual fertility cycles.

Effectiveness of Natural Family Planning

The effectiveness of any family planning method used to prevent pregnancy is typically evaluated for method effectiveness and use effectiveness. *Method effectiveness* is based on correct application of the method 100% of the time, whereas *use effectiveness* considers typical use, including situations in which the method may not have been used or was used incorrectly. The method effectiveness rates of ovulation models and symptothermal models are comparable with that of oral contraceptives. In an international effectiveness study by

the World Health Organization (1981b), a failure rate of only 2.8% was found when an ovulation model was used correctly. Fehring, Lawrence, and Philpot (1994) reported a 98.8% method effectiveness for another ovulation model. The European Natural Family Planning Study Groups (1993) found only one method failure in 4,277 cycles of women using either an ovulation model or a symptothermal model.

Use effectiveness of NFP, measured by the overall pregnancy rate whether or not the method is used correctly, is substantially lower than method effectiveness. In the World Health Organization effectiveness study (1981b), the user failure was much higher than the method failure. An unintended pregnancy rate of 3.5% was due to inaccurate application of the instructions, 0.4% to inadequate teaching, and 15.4% to couples knowingly departing from the rules of the ovulation model used. Fehring et al. (1994), in evaluating another ovulation model, found that after 12 months of use, less than 2% became pregnant because of inadequate teaching or incorrect application of the model, whereas 12.8% became pregnant when they had coitus during the fertile time, knowing that they could achieve a pregnancy. In a European study, a symptothermal model was found to have a use effectiveness of 97.6% (European Natural Family Planning Study Groups, 1993). A German symptothermal model study found a use effectiveness of 97.7% (Frank-Herrmann et al., 1991).

It is difficult to evaluate use effectiveness with regard to NFP. Some argue that because NFP can be used either to prevent or achieve pregnancy, those who knowingly have coitus during the fertile time are using it correctly to achieve pregnancy, despite their stated intention to avoid pregnancy (Fehring et al., 1994). Others categorize pregnancies by the stated intention of the couple to avoid or achieve pregnancy.

Correct application of NFP is an essential determinant of use effectiveness and depends on accurate identification of the fertile time. According to the World Health Organization teaching study (1981a), 97% of women were able to correctly identify the fertile time after completing training of an ovulation model for three menstrual cycles. The study included a diversity of women from several different cultures, of varying degrees of socioeconomic status, who ranged from not being literate to having postgraduate education. This suggests that women of various backgrounds can understand and recognize the fertile time without difficulty. This is further supported by Dorairaj (1991), who found a 98% use effectiveness of an ovulation model used by women in India who were either not literate or semiliterate.

Characteristics of NFP Users

The observation that most of the difference between the use effectiveness and the method effectiveness of NFP may be accounted for by couples knowingly departing from the rules suggests that motivation to use the method is an important factor in effectiveness. Frank-Herrmann et al. (1991) found that German women who were working, were unmarried, or had no children were most likely to be consistent users, whereas women who were not working outside the home, were married, or had children were more likely to take risks. Consistent users may have a stronger motivation to avoid pregnancy than inconsistent users. Because NFP methods do not protect against HIV or other sexually transmitted diseases, NFP may be more suitable for long-term monogamous couples than for women with multiple partners.

The observation that most of the difference between use effectiveness and method effectiveness may be accounted for by couples knowingly departing from the rules suggests that motivation is an important factor in effectiveness.

Although all women may benefit from an understanding of their fertility cycles, certain clients may be more likely than others to choose an NFP method for avoiding pregnancy. Religious belief is one of the more common reasons for choosing NFP. Stanford, Lemaire, and Fox (1994) interviewed female family practice patients who varied in marital status, age, religion, education, and socioeconomic status. The researchers found that women most interested in learning about NFP were younger women who stated that they strongly identified with their religion and that religion had a strong influence on their choice of family planning method.

Other reasons for interest in NFP were that it is natural, safe, marriage enhancing, and helps women become familiar with their bodies. The most common reasons for lack of interest in NFP were perceived unreliability in effectiveness, complexity of the method, and difficulty with abstinence or lack of spontaneity (Stanford et al., 1994).

Implications for Nurses

Despite possible difficulty with abstinence, NFP may be the best option for some clients, whether for religious, health, financial, or other reasons. Nurses should

recognize NFP as an effective method of avoiding pregnancy when used correctly all of the time and should include an overview of the methods in discussions of birth control options. Assessment of clients' religious beliefs, health status, and lifestyles will help identify those who are likely to successfully use NFP. Use of NFP is not ideal for adolescents or women with multiple partners, but is more suitable for long-term monogamous relationships.

Nurses should recognize NFP as an effective method of avoiding pregnancy when used correctly all of the time and should include an overview of such methods in discussions of birth control options.

Nurses should recognize the complexity of NFP and provide continual support and encouragement for those choosing such a method. Unless nurses are specifically trained to teach NFP, clients expressing interest in an NFP method should be referred to certified NFP instructors. Some NFP instructors are trained volunteers for nonprofit organizations, which makes the cost of learning and using NFP minimal. Local instructors can be identified by contacting the following international NFP service organizations:

Ovulation Models

Family of the Americas
P.O. Box 1170
Dunkirk, MD 20754-1170
Telephone: (301) 627-3346
Fax: (301) 627-0847

Natural Family Planning Center
of Washington, DC, Inc.
8514 Bradmoor Drive
Bethesda, MD 20824-0239
Telephone and Fax: (301) 897-9323

Pope Paul VI Institute
6901 Mercy Road
Omaha, NE 68106-2604
Telephone: (402) 390-6000
Fax: (402) 390-9851

Sympto-Thermal Models

The Couple to Couple League International
P.O. Box 111184
Cincinnati, OH 45211-1184
Telephone: (513) 471-2000
Fax: (513) 557-2449

Northwest Family Services
4805 N.E. Glisan Street
Portland, OR 97213-2957
Telephone: (503) 215-6377
Fax: (503) 215-6940

Some of these organizations also provide materials for correspondence study, which is particularly helpful in rural areas where there are no NFP instructors. More instructors and promoters of NFP are needed, and nurses would make excellent candidates for certification.

Summary

Natural family planning often is regarded as an ineffective method of avoiding pregnancy, despite research that shows high effectiveness. Nurses who offer family planning services should be knowledgeable about all types of family planning, including the ovulation method and the symptothermal method. Nurses should recognize that, given the correct information, many couples would choose NFP, whether for religious, health, financial, or other reasons. Clients deserve the opportunity to make an informed choice. Therefore, NFP should be offered along with other family planning options. Couples who choose NFP must be referred to a qualified NFP teacher for instruction over several months. Natural family planning is a safe, effective method of spacing children or limiting family size.

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