Review Article

Natural and traditional family planning methods

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Abstract

Natural family planning refers to the planning of sexual intercourse according to the desire of pregnancy by observing some symptoms occurring in women in the fertile and infertile periods of the menstrual cycle. These family planning methods have advantages, disadvantages, and applying rules. They are effective when properly applied and their rules are followed. Recently, new methods have been added to the previously known methods using electronic equipment. Health care providers should respect the choice of couples' natural family planning methodology, be aware of the options of natural family planning methods, and provide appropriate resources/advice for the correct use of the method chosen by a woman or couple.

Keywords: counseling, methods, natural family planning

Introduction

According to the World Health Organization (WHO), natural family planning was defined as the methods of planning sexual intercourse according to the desired status of pregnancy by observing some signs occurring in women in the fertile and infertile periods of the menstrual cycle. These methods are based on periodic repetition of fertile and infertile periods, disposition of a single egg in each menstrual cycle, limited lifetime of the egg (it can be fertilized in a short time, only 12-24 hours after the release of it), limited lifetime (3-5 days) of sperms in cervical mucus and upper genital area, continuously monitoring and signing the duration of the cycle and/or the symptoms, and signs associated with the cycle by women, as well as being aware of the symptoms [1,2]. Previous studies showed that women can apply natural family planning methods with similar success level while the education and socioeconomic levels of the women are different in various cultures. In a study conducted by the WHO on ovulation method in five countries with different characteristics, it was determined that 93% of the women learned to use the method correctly in the first three cycles [2].

Advantages

Fertility-awareness methods are pretty safe; needed thermometers, charts, calendars, and monitors that are used to practice can be easily obtained at reasonable prices. While women avoid taking pills or hormonal injections or inserting intrauterine devices (IUDs) and are afraid...
of the side effects associated with these methods, there are no side effects of natural family planning methods. These methods allow women to take responsibility for their own reproductive health, women can terminate the method at any time, they allow to get pregnant in the first few cycles following the termination of the method of pregnancy, women have information about infertile and fertile periods due to the method, thus the waiting time for pregnancy may be shortened. The use of barrier and natural family planning methods together provides effective contraception to women who do not want to use hormonal contraceptives or IUD [3].

Disadvantages
Fertility-awareness methods require to record carefully for a long time. Women may need several months of education before feeling safe for infertility in their cervical mucus assessments, couples may have trouble avoiding sexual intercourse during each menstrual cycle for 10-14 days or more. The cycles in which unprotected coitus occurs in unidentifiable period may cause high pregnancy rates. Women with irregular menstrual cycles, a sexually transmitted infection (STI), a disease affecting body temperature or cervical mucus, women who partially breastfeed possibly have difficulties in determining the fertility period, therefore they have the risk of unwanted pregnancies. The method is not suitable for these women. The cervical mucus method can be affected not only by breastfeeding and systemic drugs but also by cervical surgery, cryotherapy, or electrocautery [1-3].

Effectivity
It is difficult to accurately estimate the rate of effectiveness of natural family planning methods. With excellent use, the yearly pregnancy rate is 0.4% for symptothermal method while it ranges between 4% and 5% for standard days. The effectiveness of these family planning methods depends on the consistency and motivation of couples using the methods. Women/couples should be able to correctly identify the fertility period and be able to use a barrier method or avoid sexual intercourse during fertile days. In general, the typical failure rate for natural methods ranges between 12% and 20% (interval: 3% to 22%). The typical use of the method is not using any methods, waiving, or using spermicide on fertile days while correct use is avoiding sexual intercourse or using condoms on fertile days [4].

Lactational Amenorrhea Method (LAM)
This method is based on the thought that women who breastfeed by feeding their babies in the first months after birth are not naturally fertile if they fulfill certain conditions. Prolactin hormone is secreted from the anterior lobe of the pituitary gland during pregnancy and provides the production of milk, reaches its maximum level at the end of the pregnancy by increasing rapidly until the birth [5]. When nipples are stimulated by breastfeeding after birth, the neural stimuli suppress the release of dopamine which is released from the hypothalamus and controls the secretion of prolactin. Prolactin levels rapidly increase when dopamine is suppressed. Prolactin with increasing level directly reduces the secretion of this hormone by binding to gonadotropin-releasing hormone (GnRH) expressing neurons in the hypothalamus. As a result of the suppression of GnRH, the production of follicle stimulating hormone (FSH) and luteinizing hormone (LH) are suppressed and therefore no ovulation occurs. They are secreted from the anterior lobe of the pituitary gland, affect the ovaries and also provides the production of estrogen and progesterone [6].

Thus, amenorrhea and infertility occur naturally in the lactation period. This suppression in the ovulation period is effectual when a mother frequently feeds her baby with only her breast milk for at least four minutes at every turn with intervals of no longer than three hours at daytime and of no longer than six hours at night. It is valid for the first six months if 85% of daily nutrition is provided with breast milk and menstruation cycle does not start. It is stated that ovulation and menstrual bleeding restart near the end of the sixth month after delivery in 20-50% of fully breastfeeding women. Therefore, the effectivity of LAM decreases in the course of time after delivery, one of the effective protection methods must be started to use by women at the end of this period. Mothers also start to an effective contraceptive method when they start to eat complementary foods because ovulation can occur without menstruation. Milking (milked breast milk) should be also considered as a complementary food. If the conditions defined are fully provided, the chance of getting pregnant of breastfeeding mothers who do not have menstruation bleeding for the first six months is only 2%. When the LAM is applied correctly, it is a very effective method at the rate of 98-99.5% [7,8]. It is easy to use, effective at a rate of 98% and practicable immediately after birth. It makes positive contributions to maternal and infant health, does not need any additional method, does not affect breastfeeding and sexual intercourse, and does not have side effects. The lack of suitability for non-nursing mother, the difficulty in adapting to the rules of breastfeeding required for the effectiveness of the method, the limited duration such as the first six months, the necessity to meet the criteria for being effective and the lack of protectiveness against sexually transmitted diseases are negative sides of the method [5].

Basal Body Temperature Method (BBT)
The basal body temperature is the body temperature of a full resting person at night before starting the normal activities, including eating. The basis of the basal body temperature method is the effect of progesterone hormone on the heat regulation center in the brain, increasing the body temperature between 0.2°C-0.5°C by causing perfusion due to vasodilatation in the subcutaneous vessels and keeping it high until the next menstruation. It is thought that ovulation takes place the day before the first day of increasing body temperature. Body temperature measurement should be carried out with a sensitive thermometer device at the same time every day getting up in the morning and before eating and drinking something for at least three months; the measured values should be recorded with dates. During the first ten days of the menstrual cycle, the value of the highest body temperature measured is determined, a line of 0.1 degrees Celsius above this temperature is drawn; it is called as heat line. The body temperature measurements above the heat line for at least three consecutive days indicate ovulation. The consecutiveness of high body temperature measurements is important, they cannot be considered as ovulation if one of the measurements is under the heat line within three days. The infertile period begins on the evening of the day of the third high-temperature measurement; no additional heat measurement is required until the beginning of the next menstruation. A woman's body temperature can be affected by many environmental factors, therefore misleading results may be obtained; this method is not recommended to use separately [1,7,9].

**Billings Ovulation Method**

During the menstrual cycle, the levels of estrogen and progesterone hormones as well as the properties of the secretion of cervix change. The billings ovulation method is based on monitoring these changes of the cervical mucus by women during the menstrual cycle, noticing the feeling in the vulva, observing the characteristic of the mucus in the toilet and recording these changes in a schedule. Thus, fertile and infertile days are determined. If the required rules are followed when the pregnancy is not desired, the success of the method reaches 98% [10].

**Menstruation bleeding period**

The number of days of bleeding may vary from woman to woman and from cycle to cycle. Sexual intercourse is prohibited in this period because of the risk of early maturation of the follicle [11].

**Essential infertile period**

After the end of the menstruation cycle, women live a few days in which there is no cervical mucus and the vagina is dry. In the next step, the secretions will be sticky, viscous, white or yellow in color and rough. Since follicles are not yet developed in ovaries, women are infertile during this period; sexual intercourse is recommended every other day if pregnancy is not desired. The reason why sexual intercourse is over-recommended is to reduce the fallibility of women because semen remains in the vagina on the day after sexual intercourse may cause wetness [11].

**Fertile period**

As ovulation approaches, an increase in estrogen amount as a result of the stimulation of ovaries by FSH increases mucus production by stimulating glands in the cervix; mucus becomes thinner and gets a clear color, more elastic and also slippery; this mucus resembling a raw egg white can be slowly extended between two fingers. Due to this characteristic of cervical mucus, women feel moisture, wetness, slickness, and lubricity around the vagina and in the vulva. The cervical mucus having these features helps sperms to survive for up to 3-5 days. The last day of the observation this mucus which is similar to raw egg white is called the peak day. When the life expectancies of ovaries and sperms in the female body are taken into consideration, the fertility period takes three more days after the peak day [1].

**Infertility period**

It is the time from the fourth day after the peak day to the beginning of the next menstruation period. After ovulation, the amount of cervical mucus decreases as a result of increased progesterone hormone due to LH. Cervical mucus is thick, tacky, dark, and rough. Therefore, women feel their vaginas dry. Because of this characteristic of cervical mucus, sperm cannot survive or move with difficulty. Therefore, this period is called infertility period. There is no possibility of pregnancy in this period, so you can always safely have sexual intercourse. The pregnancy rate in correct use is 2% while it is 13% in typical use [11].

**TwoDay Method**

It is a method based on determining the presence or absence of cervical mucus. In this method, the presence of cervical mucus is sufficient; it is an advantage for this method independently of the property. Women ask themselves simple two simple questions "Did I
notice any vaginal secretion yesterday?" and "Have I noticed any vaginal secretion today?". If the answers to both of these questions are yes, women are on a fertile day. If the answers are no, they are infertile and can have unprotected sexual intercourse. The pregnancy rate was found as 3.5% for correct use, the pregnancy rate was found to be 14% for typical use [12].

**Symptothermal Method**

This method is based on daily monitoring and recording of the changes in cervical mucus and basal body temperature. However, it can be supported with signs of ovulation breast sensitivity, back and abdominal pain. According to the double control principle, it is tried to determine the beginning and end of the fertile phase so that the reliability of both methods is increased. Wet, slippery, transparent, and flexible cervical mucus or increased basal body temperature indicates that the fertile period has started; this situation is independent from the sequence of them. Therefore, it is required that women assess the properties of cervical mucus every day and also measure their body temperature with a sensitive thermometer every morning. The pregnancy rate is 2% in normal use while it is 13% in typical use [1,2,13].

**Cervical Palpation Method**

This method is based on the diagnosis of cervical changes as a result of estrogen according to the stages of the menstrual cycle by self-palpation and the interpretation of them. Cervical palpation should be performed every day except the menstrual period before going to sleep and at the same position (squatting or standing) every night; the findings should be recorded. 4-5 days prior to ovulation, the cervix is felt like lip; it softens, raises upward; cervical os opens; reaching cervix with palpation more difficult. These findings are the indicators of the fertile period. In the days following the ovulation, the cervix hardens like the middle of the nose tip, goes down and os closes. These findings indicate the infertile period. If a couple wants to be protected from pregnancy, they should not have unprotected sexual intercourse from the first day of palpable changes until it becomes palpable and easy palpable [2,7].

**Calendar (Rhythm) Method**

A woman should monitor the natural menstruation cycle for 6 to 12 months before using this method (the risk of being pregnant during this time is significant). 18 days are subtracted from the shortest cycle to determine the first fertile day, while 11 days are removed from the longest cycle to determine the last fertile day. For a woman whose menstrual cycle duration ranges from 26 to 32 days, the first fertile day is the 8th day and the last fertile day is 21st day. The mean cycle length is approximately 29 days, the duration of infertility is 14 days or approximately half of the cycle. If the length of all cycles is shorter than 27 days, the use of the calendar method is not recommended [1].

**Standard Days Method**

The Standard Days Method is a practical and natural family planning method. Menstruation cycles are designed for women with menstruation time ranging from 26 to 32 days without any exceptions. Users are encouraged to follow high and low fertility days with a series of colored beads which have a trading name of CycleBeads. CycleBeads is an important component of the standard days method because it helps users to easily understand and implement this method. CycleBeads contain 32 beads representing the days of the menstrual cycle. The first red bead is the first day of menstrual bleeding. The next six beads, which are brown, represent infertile days. The next 12 white beads (between 8th day to 19th day) represent fertile days while the last 13 beads are brown and represent infertile days. Women should be informed to put the rubber ring on the red bead on the first day of the menstruation cycle and move the rubber ring, a bead goes forward every day. They should be informed that unprotected sexual intercourse is safe on the days of brown beads, but unprotected sexual intercourse is not safe on the days of white beads if pregnancy is not desired. It is not a suitable method for women who do not have regular menstrual cycles or menstrual cycles of less than 26 days or more than 32 days. A woman should not use this method if she has two or more menstrual cycles which are less than 26 days or more than 32 days in one year. the pregnancy rate is 12% for typical use while the pregnancy rate is 4.6% in correct use (the effectivity of the method in correct use is 95.4% while it is 88% in typical use) [14-17].

**Marquette Method**

The Marquette Method, which includes the use of the electronic hormonal fertility monitor (EHFM) to estimate the fertile phase of the menstrual cycle, is used in conjunction with other natural fertility markers such as cervical mucus changes and changes in basal body temperature. It is an EHFM that is used at home to help women to estimate fertile days of the menstrual cycle by measuring the two key reproductive hormones in the urine as estrogen and luteinizing hormone. Fertility monitoring is aimed to help to achieve pregnancy.
However, the information provided by it is also useful for women and couples who want to prevent pregnancy. The used EHFM is designed to monitor the varying levels of a urinary metabolite of estrogen urinary metabolite (estrone-3-glucuronide or E3G) and luteinizing hormone (LH). The monitor targets the most suitable days for pregnancy by specifying three levels of fertility as low, high, and highest. High fertility reading is indicated when an E3G threshold level is detected while peak reading occurs when an LH threshold level is determined. The EHFM has a small LCD screen that informs the user about the daily fertility status, cycle day, and the need for a urinary test [18-20].

Withdrawal (Coitus Interruptus) Method
It is a method used to take the male's penis out from the vagina before ejaculation. The use of this method can be preferred by couples because it is easy to give up, does not contain hormones or any chemicals and does not have any costs. However, it may be a cause of sexual dissatisfaction and psychological tension when the method is continuously used [3]. There are sperms in seminal fluid before ejaculation; individuals may also not always be auto-controlled in interrupting coitus. The withdrawal method has an important role in the unwanted pregnancies, therefore it is not a reliable method [21]. The estimates from large population-based studies estimate a typical failure rate as 22%. 4% of the couples have pregnancy within 12 months when they used the method perfectly [3]. Turkey is one of the top 10 countries in terms of the rate of withdrawal method usage; the ratio is 25.5% (22). When the results of Turkey Demographic and Health Survey (TDHS - 2013) were examined, there was no significant change in the rate of withdrawal method using in Turkey according to years; one of every four couples use this method (25.5%) [23].

Vaginal Washing
It is immediate washing of vagina wall and channel with water by a woman after sexual intercourse. It is an ineffective contraceptive method because sperms can pass cervical mucus in a few seconds [24].

Conclusion
Natural family planning methods are effective when applied it correctly and their rules are followed. Health care staff should respect the choices of couples about natural family planning methodology, be aware of the options of natural family planning methods and provide appropriate resources/consultancy for the correct use of the method chosen by a woman or couple. Couples using natural family planning methods should be informed about emergency contraception methods and sexually transmitted diseases. All pregnant or postpartum women should be informed about the criteria for the method of lactation amenorrhea.

Conflict of interest
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References