Natural Family Planning

CMR

CURRENT MEDICAL RESEARCH

A SUPPLEMENT OF *NFP FORUM*

Vol. 19, Nos. 3 & 4, Summer/Fall 2006

NFP RELATED STUDIES

Highest Probability of Pregnancy is On Peak Day of Cervical Mucus

A new data set of 2,755 menstrual cycles was developed by Italian researchers from 193 women users of the Billings Ovulation Method (BOM).[1] The purpose of the data set was to determine characteristics of the menstrual cycle, mucus cycle patterns, intercourse patterns, and day specific probabilities of fecundity. The 193 women users were taught the BOM at 4 Natural Family Planning (NFP) centers in Italy. Data charts were collected from each center from 1993-1997. The mucus recordings on the charts were then classified by the researchers on a 0 to 5 scale (based on sensation and appearance) with 0 = no information, 1 = no mucus, no or dry sensation, to 5 = wet slippery, clear stringy, fluid watery mucus. The Peak Day was standardized for the four centers and defined as:

> *The last day of the cycle during which at least one characteristic of high fertility in mucus type is observed or felt, considering as characteristics of high fertility a sensation of wetness/slipperiness and/or slippery, transparent, fluid or watery mucus, sometimes associated to blood trails/spotting. This day must also be preceded by an adequate increase in sensations and the appearance of mucus characteristics, and followed by an abrupt change.*

This Peak Day was then set as day 0 and was used as the estimate of the day of ovulation. There were 142 conception cycles produced from this data set. Day specific probabilities of pregnancy were based on a 12 day period, from 8 days before day 0 to 3 days after, and determined by the Schwartz Statistical Model.

Results were as follows:

1. There was a mucus reference of 0 in 82.9% of the 2,755 cycles.
2. The mean length of the cycles was 29.1 days, SD=4.45.
3. The mean length of the pre-ovulatory phase was 16.4 days, SD=4.29.
4. The mean length of the post-ovulatory phase was 12.7 days, SD=1.88.
5. The mean number of mucus days with a 3-5 rating was 15 days.
6. The average number of acts of intercourse during conception cycles was 5.87 (as reported by the woman user).
7. The average number of acts of intercourse during non-conception cycles was 3.96 (as recorded by the woman user).
8. There was some probability of pregnancy from an act of inter-

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RESEARCH ON. . .

Editor: Richard J. Fehring, DNSc, RN
Managing Editor: Theresa Notare, MA

Send all inquires to: DDP/NFP, USCCB, 3211 4th St., N.E. Washington, DC 20017.
Questions: 202-541-3240/3070;
Orders: 1-866-582-0943; FAX 202-541-3054;
nfp@usccb.org

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course during 11 days of the 12 day study period, with the lowest probability (0.012) 7 days before day 0 and the highest (0.429) on day 0.

9. The highest level of probability was from 4 days before day 0 until one day after - i.e., a 5-6 day period.

The researchers noticed considerable inter-observer variation in describing and grading the cervical mucus recordings. Small differences in interpreting the peak mucus day resulted in significant effects on the parameters of the menstrual cycle. The researchers had several questions:

1. Could menstrual cycles be classified into categories based on mucus patterns?
2. Can mucus data be used for diagnostic purposes, e.g., to identify women who have hormonally irregular cycles?
3. Are there better ways to characterize heterogeneity among women and cycles?

The researchers also questioned whether categorizing mucus patterns could help predict characteristics of future menstrual cycles or predict the most fertile days of future cycles.

Comments

There can be a problem using cervical mucus as proxy for the actual day of ovulation. Cervical mucus is an imprecise marker of ovulation and can result in extending the fertile phase beyond the actual 6-day phase. Of special interest to NFP users is the percentage of cycles without an identified Peak Day of cervical mucus (17%) and, as a result, no estimate of the day of ovulation and the beginning of the end of the fertile window. Lack of a clear estimate of ovulation is a serious problem for NFP methods that rely on the Peak Day of cervical mucus as an estimate of ovulation. Another serious problem is the average of 15 days of mucus rated greater than 2, i.e., potential fertile days. This results in a considerable amount of abstinence for each cycle when couples are using the method to avoid pregnancy. (RJF)

1. Colombo B, Mion A, Passarin K, & Scarpa B. **Cervical mucus symptom and daily fecundability: first results from a new database.** *Statistical Methods in Medical Research*, 2006; 15:161-180.

Probability of Conception Found to be near 0 on Days of Menstrual Cycle with no Secretions

Researchers from the University of Pavia, Italy used the same data set of menstrual cycles (described in the previous review) to determine day specific probabilities of pregnancy based on the presence or absence of cervical mucus.[1] The BOM users produced 161 conception and 2,594 non-conception cycles. The researchers applied a statistical fecundity model to the data to determine day specific probabilities of intercourse based on the mucus ratings as graded by BOM teachers from the NFP charts provided.

The results showed there was a range of probability of pregnancy from an act of intercourse with the lowest (0.003) on days with no noticeable cervical mucus secretions to (0.290) on days with high rated cervical mucus. However, the probability of a pregnancy from high rated mucus was less than 20% outside of days 10-17 to a peak of 59% on day 13 of the menstrual cycle. The researchers concluded that, regardless of the timing of intercourse during the menstrual cycle, the probability of pregnancy with an act of intercourse on days with no cervical secretion is near 0. They also stated that the probability increased dramatically to near 30% with the most fertile mucus. They concluded that cervical mucus secretions accurately predict both the timing of the fertile phase of the menstrual cycle and the day specific probabilities of conception.

Comments

I would like to see a study that looked at the probability of pregnancy from an act of

intercourse during the 6 day fertile window based on an accurate measure of the fertile window (e.g., ultrasound detected ovulation) in relation to cervical mucus secretions. Obviously the impact of mucus or no mucus will be the greatest during those 6 days. The reason the researchers in the above study found the probability increasing to 59% during days 10-17 is that those days have the highest probability of including the 6 day fertile window. (RJF)

1. Scarpa B, Dunson DB, & Colombo B. **Cervical mucus secretions on the day of intercourse: an accurate marker of highly fertile days.** *European Journal of Obstetrics and Gynecology and Reproductive Biology*, 2006; 125:72-78.

Time to Pregnancy Influenced by Long Cycles and Increased Age

Scientists from the University Hospital, Lund, Sweden, retrospectively studied environmental and lifestyle factors that influence time to pregnancy among 1,578 randomly selected women from the general Swedish population.[1] The women participants were mailed a self-administered questionnaire and were asked to recall time to pregnancy for their first pregnancy and to identify lifestyle factors, such as hormonal contraceptive use, smoking, age at first pregnancy, alcohol consumption, length of menstrual cycles, and — if working outside of home — factors such as night shift work and work related stress.

The Swedish scientists found the mean time to pregnancy (TTP) was 2 months. Factors that increased TTP were increased age, menstrual cycle length, nulliparity, oral contraceptive use, alcohol consumption, full-time work, and work related stress. However, when the factors were statistically analyzed with multiple regression models, only increased age, menstrual cycle length, and parity provided significant variance, and together predicted only 14% of TTP. When the first two months of attempting to achieve a pregnancy were factored out, only age at conception and menstrual cycle length were significant factors to TTP and contributed only 8% of the predictability. The authors concluded the biological and environmental factors used in the TTP models of this study have only a fraction of the variation in TTP; however, of these factors, the biological seem to be the most important.

Comments

This study adds to the evidence that oral contraception use affects the variability in cycle length and TTP only for about 2-3 cycles post use. The use of retrospective recall for determining TTP would not be accurate as information that was prospectively obtained. The average recall time in this study was 8 years, a rather long time to remember how long it takes for achieving pregnancy. (RJF)

1. Axmon A, Rylander L, Albin M, & Hagner L. **Factors affecting time to pregnancy**. *Human Reproduction*, 2006;21:1279-1284.

MENSTRUAL CYCLE

Chance of Double Ovulation Increases as Women Age

Researchers from the Netherlands (Urije University Medical Centre, Amsterdam) investigated the hypothesis that the increased chance of a twin pregnancy with increasing age (when fertility is declining) is due to the increased tendency of multiple follicular development (and increased FSH levels).[1] The participants for this study were 507 women, between

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the ages of 24 - 41, who either had a male partner with mild infertility or had unexplained infertility. Each participant had 1 - 3 menstrual cycles with serial follicular ultrasound up to 24 hours before ovulation. The researchers measured the number of follicles > 14 mm and FSH levels (on day 3 of these cycles). They collected a total of 959 spontaneous ovulatory cycles of data but only 281 cycles with the FSH levels.

The researchers found that of the 507 women, 402 (79%) never had a multiple follicular cycle. But 105 women had documented cycles with two or more follicles > 14 mm. There was a statistical difference between the ages of the mono (34.6 years) versus the multiple follicular growth (36.1 years) participants. Furthermore, they found FSH levels were statistically higher in the multiple group (10.3 IU/l) compared with the mono group (7.7 IU/l). The authors stated that this was the first documented evidence that progressive aging is related to the increased frequency of natural multiple follicular growth cycles and that elevated FSH levels are associated with this phenomenon.

Comments

When I first heard about this study, I thought it was going to be another study stating that woman can ovulate twice in one menstrual cycle and that the ovulations can be more than 24 hours apart. If this was true, NFP does not work. But this study actually, makes sense and does provide some evidence for the hypothesis. However, the researchers did not demonstrate that any of the mature > 14 mm follicles they observed actually resulted in an ovulation other than the dominant follicle. (RJF)

1. Beemsterboer SN, Homburg R, Gorter NA, Schats R, Hompes PGA, & Lambalk CB. **The paradox of declining fertility but increasing twinning rates with advancing maternal age**. *Human Reproduction*, 2006; (Epub) February 23, 2006.

Japanese Researchers Find Soybeans Help Regulate Menstrual Cycles

Researchers from the Keiju Medical Center in Nanao, Japan treated 36 patients who were experiencing secondary amenorrhea, i.e., no menstruation or no ovulation for at least 6 months with 6 g of black soybean in micro-powder form per day.[1] The researchers matched these 36 patients with another 34 patients diagnosed with amenorrhea and measured their basal body temperature shifts and follicular development through ultrasound. They found that, within 3 months of soy ingestion, the soy group had 12 participants with improved ovulation, 4 participants become pregnant, and 3 experienced anovular menstruation. The mean ovulation for all 36 participants was 66 days +/- 12 days. Once the participants started to ovulate, they had regular cycles with at least a 7 day post BBT shift luteal phase. In contrast, the control group only had 2 participants with improved ovulation and 2 with anovular menstruation.

Comments

This is only a small non-randomized study, but the use of soy products might be an inexpensive and non-medical way of helping women to regulate irregular and anovulatory cycles. The consistent use of soy products might help more women be able to use NFP methods. An interesting topic for further study would be to investigate whether Japanese women or women who traditionally consume large amounts of soy products, have cycle patterns that are more regular than US women. (RJF)

1. Kohama T, Kobayashi H, & Inoue M. **The effect of soybeans on the anovulatory cycle**. *Journal of Medicinal Food*, 2005;8:550-551.

Accuracy of Menstrual Cycle Irregularity Reported by Recall is Weak

Nurse researchers at the University of Washington conducted a study to determine how retrospective self-report of menstrual cycle irregularity compared with prospective menstrual cycle records, and to see how definitions of irregularity affected reporting.[1] The participants were 161 menopausal transitional women who completed menstrual cycle records (calendars) and a menstrual cycle questionnaire. The researchers found that the concordance between recorded and reported menstrual cycle irregularity was weak (Cohen's kappa = 0.192). The participants' agreement with the researchers that a menstrual cycle had been skipped was stronger (kappa = 0.597) and increased when the researchers' definition of irregularity was provided to the participants (kappa = 0.765). The researchers concluded that accuracy of recalled menstrual cycle irregularity is weak but can be improved when a women is informed what is meant by those terms. They recommended that clinicians working with women who need to report menstrual cycle data be precise with the phenomenon they are assessing.

Comment

Taking the advice of the authors of this study is relevant to the teaching of NFP. Most NFP systems require NFP teachers to complete an intake form on each client at registration. Typical information recorded during registration includes a woman's menstrual history, i.e., length and regularity. (RJF)

1. Smith-DiJulia K, Mitchell ES, & Woods NF. **Concordance of retrospective and prospective reporting of menstrual irregularity by women in the menopausal transition**. *Climacteric*, 2005:8:390-397.

Longer Menstrual Cycle Length Associated with Cardiovascular Disease (CVD) Risk Factors

The overall objective of this study (called the Daily Hormone Study) was to determine the associations among menstrual cycle characteristics, daily reproductive hormone measures, and cardiovascular disease (CVD) risk factors in middle age women.[1] This study was a subset of the multi-site federally funded Study of Women's Health Across the Nation (SWAN) and involved a subset of 500 menstruating women who had daily urine samples collected across one menstrual cycle. The urine samples were tested for LH, FSH, estrone conjugates, and pregnanedial glucuronide. Outcome measures included body mass index (BMI), blood pressure, blood sugar levels, and other hemostatic and metabolic factors. Researchers analyzed the results by comparing menstrual cycles with evidence of luteal activity (ELA) and those that did not have luteal activity (NLA). They found few differences in risk factor outcomes between the ELA and NLA women. They did find a positive association between CVD risk factors and longer cycles, but this association was reduced by the factor of age and BMI, i.e., younger thinner women had less association with CVD risk.

Comments

This study makes sense since women with higher BMI tend to have longer cycle lengths (especially those with polycystic ovaries). The ages of the participants were between 42 - 52 years, so some participants might have experienced longer cycles due to pending menopause and decreased follicular reserve. Of interest, of the cycles with ELA, 65 were 24 days in length or less, 304 were between 25-32 days in length, and 51 were greater than 33 days in length. (RJF)

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1. Matthews KA, Santoro N, Lasley B., et al., **Relation of cardiovascular risk factors in women approaching menopause to menstrual cycle characteristics and reproductive hormones in the follicular and luteal phases.** *Journal of Clinical Endocrinology and Metabolism*, 2006, Feb, 21.

50% of Italian Women Surveyed Prefer to Lessen Frequency of Menstrual Periods

Researchers from the Center for Reproductive Medicine at the University of Pavia, Italy, conducted a survey of reproductive age women (N=270) in order to determine desired menstrual cycle frequency.[1] The 270 respondents were obtained from one hospital gynecology clinic in Genoa, Italy, and represented 81.3% of women solicited to complete a 6-item menstrual desire questionnaire. The respondents were required to have regular menstrual cycles (between 21 - 35 days in length) and not be experiencing menstrual headache, dysmenorrhea, hypermenorrhea and /or premenstrual syndrome.

The 6 items of the questionnaire were as follows:

1. What would be your desired menstrual frequency if this were not correlated with your health?
2. Menstrual periods interfere with my sexual life.
3. Menstrual periods interfere with practicing sports.
4. Menstrual periods interfere with my work.
5. Menstrual periods interfere with the choice of clothes.
6. I would like to lessen the frequency of menstrual periods.

The researchers found 28.8% of respondents preferred not to have a menstrual period, and 27.8% expressed the desire to experience menses less frequently. They also found that 75.6% felt menses interfered with their sex life, 28.8% would prefer not experiencing menses during work, and 48.7% found menses interfered with the practice of sports. Of those who desired to experience menses less frequently, 73% would be willing to use drugs to achieve the desired effect. The researchers concluded that over 50% of women without menses related health problems would prefer a reduction in the frequency of menses.

Comments

The largest group of respondents 43.7% (N=118) preferred to have a normal monthly menstrual cycle. Furthermore, the sample of women surveyed was rather homogeneous, in that they were mostly educated Caucasian working women from one city in Italy. (RJF)

1. Ferrero S, Abbomonte LH, Giordano M, Alessandri F, Anerini P, Remorgida V, & Ragin N. **What is the desired menstrual frequency of women without menstruation-related symptoms?** *Contraception*, 2006;73:537-541.

FAMILY PLANNING RESEARCH

Fertility, Family Planning, and Reproductive Health of US Women

A report was released by the Center for Disease Control and Prevention (CDC) in December of 2005 with data collected in the Cycle 6, 2002, National Survey of Family Growth (NSFG).[1] The purpose of the report was to describe the reproductive experiences (i.e., fertility, family planning, and reproductive health indicators) of women between the ages of

15 - 44. The 2002 NSFG included in-person interviews with 7,643 randomly selected women and 4,928 randomly selected men. Some of the relevant highlights from the survey were as follows:

- The proportion of women with 3 or more children is associated with lower education and income. For example, only 12% of college educated women have 3 or more children compared with 47% with less than a high school education.
- About 21% of births occurred among women who were neither married nor cohabitating.
- Only 23% of births among black women occurred within marriage compared to 74% of white women.
- About 64% of births were intended at the time of conception, 14 % were unwanted, and 21% were mistimed. The 14% of unwanted births represents an increase from 9% in the Cycle 5 survey.
- The mistimed births decreased from 15% among less than high school educated women to 2% among college educated women.
- Women with lower education and income were less likely to use a form of contraception.
- In 2002, 12% of the sample reported to have impaired fecundity.
- In 2002, 7.4% of married women were infertile. This is a decrease from 8.4% in 1982.
- The overall rate of women initiating breastfeeding after recent births increased from 55% to 67% between 1995 and 2002.
- Age of first menstrual period (menarche) is consistent among all ethnic groups ranging from 12.0 years to 12.7 years

Contraceptive Data:

- The leading methods of contraception among women 15-44 were: (1) oral contraceptive pill (19%), (2) female sterilization (17%), and (3) male condom (11%). In numbers, 11.6 million women were using the pill, and 10.3 million were using female sterilization.
- NFP users (cervical mucus and temperature) represent 0.2% of the respondents or 124,000 users. However, because 0.7% list "Rhythm" as their current method, the periodic abstinence users total about a half million
- Female sterilization is the leading method of contraception among women 35-44 years of age.
- Female sterilization is the number one method among currently married or formerly married women.
- Female sterilization is the most popular method among Hispanic and Black women.

Comments

About 29% of pill users discontinued use due to side effects. Sixty-five percent of the discontinuations were because of actual side effects, 13% because they were worried about side effects, and another 13% were worried about the effects on the menstrual cycle. It would seem these worried women might be interested in the use of a simple and accurate natural method of family planning that has no side effects. (RJF)

1. Chandra A, Martinez GM, Mosher WD, Abma JC, & Jones J. **Fertility, family planning, and reproductive health of U.S. women: data from the 2002 National Survey of Family Growth.** *Vital and Health Statistics*, Series 23, Number 25, December 2005.

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What does 'Natural' Mean to Family Planning Users and Providers?

The meaning of 'natural' with regard to Natural Family Planning methods and contraception is often debated by providers and users. Researchers in the department of public health at the University of Melbourne were interested in determining how users and providers of contraception conceptualized the concept of 'natural' body in the context of contraceptive decision making.[1] The researchers interviewed 32 users and 19 providers (11 physicians and 8 professional nurses) of emergency contraception (EC) through a focus group process. The focus group discussion included the topics of emergency contraception use, contraceptive decision-making, and the concept of risk. The focus group interviews were taped, transcribed, and qualitatively analyzed for themes.

The researchers discovered users and providers of EC conceptualized the concept of 'natural' body differently. Thirteen of the 32 users of EC indicated that the concept of 'natural' was part of their contraceptive decision making. They essentially conceptualized 'natural' body as no disruption of the ovulatory process and the absence of side effects. Another 6 of these 13 women also felt they needed to use a contraceptive method that preserved their natural body (such as the use of condoms and Rhythm). Providers of EC essentially conceptualized 'natural' as a risk benefit analysis.

Comments

What I found interesting are some of the verbatim responses in the article (especially from the users). For example:

"I feel fantastic, I realize now, that all of those years that I was on the Pill, I don't think I ever felt right, but because I went on it so young, I never really noticed. I think also because I went on the combined Pill so young, I think it delayed the development of some of my secondary sex characteristics, like when I went off it, my breasts got bigger, my hips got bigger, and that happens as you get older anyway, but it really felt like being on the Pill had retarded something ... I feel like I'm more in tune with my body now and its natural cycle."

It is interesting that the author provides a conceptualization at the beginning of her article on the use of EC from the perspective of the users. She states that fertility management can be conceptualized as a juggling of the needs of the sexual body and the fertile body. Furthermore, these two bodies have conflicting needs: women's sexual bodies are expected to be available in their relationships, but the fertile body needs not only to be protected from pregnancy but also to be protected for the future. She believes that contraception is a technology that helps to manage the conflict between the sexual and the fertile body, but that the available contraceptive techniques fail to do this adequately.

The providers of EC in this article seem to be advocating a view of "natural" to suit their agenda. For example one of the providers, after stating that the amount of hormones in hormonal contraception is a drop in the bucket and should be trivialized, explained that "only then do women think it is a small amount and then they're more likely to continue with their oral contraceptive." This is not health care that seeks the well being of the whole person. I thought that we (as health professionals and from a holistic health perspective) were trying to avoid a dualistic understanding of the body - i.e., we are one body - we cannot separate the sexual self from the fertile self. The goal is to be integrated. From an NFP standpoint, this article indicates that women are looking for natural methods of family planning that are risk free and do not disrupt the natural reproductive process. FP providers should help more women to consider using NFP with this approach.

FYI - the journal *Sexual Health* is a new peer reviewed journal that can be accessed online - see link below. (RJF)

1. Keogh LH. **Understandings of the 'natural' body: comparison of the views of users and providers of emergency contraception.** *Sexual Health*, 2005;2:109-115.
http://www.acshp.org.au/sexual_health/publications/sexual_health_journal.htm

Continuous Versus Conventional Use of Oral Contraceptives: Follicular Patterns and Return to Fertility

Canadian researchers (in the Department of Obstetrics and Gynecology, College of Medicine, at the University of Saskatchewan) conducted a study to determine the differences in follicular and endometrial development among continuous oral contraceptive (OC) users and traditional OC users (i.e., traditional OC users take the Pill for 21 days and then 7 days off) during and after discontinuation of use.[1] The 7 days off period is called the hormone free interval (HFI). Also, the researchers were interested in mechanisms that affect time to ovulation after discontinuing OCs.

The participants for this study were 36 women between the age of 18 and 35 who were randomly assigned to receive either continuous or conventional OCs for three 28 day cycles. The participants underwent daily high resolution transvaginal ultrasound from day 7 of the menstrual cycle. When a follicle reached >14 mm, they monitored the follicle until resolution, i.e., ovulation or resolution. The results showed no dominant follicular development with continuous use, but there were 8 follicles > 14 mm with conventional use, all developed during the HFI, and two subsequently ovulated. They also determined that after discontinuation of OCs, ovulation took about 5 days longer to occur compared to naturally occurring cycles, i.e., a mean of 20 days for the post OC cycles and 15 days for the naturally occurring cycles. Endometrial thickness between the two groups did not differ. They theorized that the difference in time to ovulation, post OC use, was due to having no follicular growth during the wave of development that would occur in naturally ovulating women. The antral follicles post OC use do not, in a sense, have a running start, but begin developing only after the hormones are no longer circulating. In normal cycling women follicular growth begins in the luteal phase of the previous cycle.

Comment

Of interest, the researchers threw out one post OC cycle because ovulation had not occurred until day 63. The researchers also found clinically low levels of progesterone in 40% of the cycles following discontinuation of OCs. They speculated this could cause poor luteal phase development and provide another reason why there is a delay in fertility. Women discontinuing OCs and using NFP can expect to see a delay in ovulation and thus a delay in natural ovulatory signs (e.g., cervical mucus peak) and maybe altered temperature rises due to poor progesterone levels post ovulation. (RJF)

1. Birtch RL, Olotunbosun OA, & Pierson RA. **Ovarian follicular dynamics during conventional vs. continuous oral contraceptive use.** *Contraception*, 2006;73:235-243.

Increased Incidence of Headaches Associated with Oral Contraceptive Use

A large population based study was conducted in Norway on users, previous users, and non-users of hormonal oral contraception (OC) to see if there was an association between OC use and headaches.[1] This study was a sub-set of a study conducted in one county of Norway in which all of the residents age 20 and older were asked to participate. The larger overall study, called the Nord-Trøndelag Health Study (NTHS), involved 46,405 women who were

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invited to participate, and 74% responded. The NTHS included detailed questions about headaches, and — for women — family planning history. There were 27,700 women who responded to the headache questionnaire, and of these 14,353 were premenopausal. Of these, 2,012 were currently using OCs, 3,820 had never used OCs, and 8,078 had used OCs in the past.

The results showed headaches were more prevalent among current and past users of OCs than those who never used OCs. They also found the same results among users of the lower dose estrogen/progestin type OCs. However, the women taking the progestin only pills did not have an increased prevalence of headaches. The authors concluded that headaches (especially migraine type headaches) were more likely to happen among users of estrogen containing OCs.

Comment

The authors speculated that the headaches might be due to the withdrawal of hormones during the 7 day free period in traditional OC use. The new continuous use OCs would reduce that withdrawal of hormones to 4 times a year. However, this does not explain why past use would increase the prevalence of headaches. OC users who suffer from migraine headaches might consider using NFP as an alternative method of family planning. (RJF)

1. Aegidius K, Zwart JA, Hagen K, Schei B, & Stovner LJ. **Oral contraceptives and increased headache prevalence. (The head-HUNT Study).** *Neurology*, 2006;66:349-353.

Health Professionals Play Key Role in Contraceptive Decision-Making

Researchers from the University of North Carolina School of Medicine conducted a cross sectional survey to determine the correlation between the priority reasons for using a contraceptive method and the type of method used.[1] The priority reasons provided by the researchers were either pregnancy avoidance or sexually transmitted disease (STD) prevention. The researchers were able to obtain a convenience sample of 433 women between the ages of 18 - 44 at five shopping malls in the US. The participants were asked to complete a questionnaire on contraceptive knowledge, use, and reasons for contraceptive choice. The assumptions of the researchers were that use of oral hormonal, injectable hormonal, or sterilization was consistent with the priority of preventing pregnancy. Condom use coincided with the priority of preventing STDs.

Of the 433 respondents, 203 (83%) listed pregnancy prevention as their priority reason for using contraception and 43 (17%) listed STD prevention. Based on the researcher's assumptions, only 25% of the respondents utilized a method of contraception consistent with their stated priority. They also found the only factor that facilitated choosing a method of contraception coinciding with their stated priority was a history of discussing contraception with their professional health care provider. They also found that their knowledge of contraception was independent from their having received contraceptive counseling from a health care provider.

Comments

Only 6 (2%) of the respondents listed periodic abstinence as their method of family planning. The most useful information from this study for Natural Family Planning/fertility awareness based methods is that most women reported receiving their method of contraception from a health care provider or health care system, i.e., only 5 of the 433 respondents received their method of family planning from a source other than a health care professional or health care setting. Furthermore, health clinics were by far the most common source of information about birth control. The assumptions of the researchers that the only reasons

women use contraception (family planning) is either to avoid pregnancy or to prevent STDs is limiting. There are other factors that come into family planning decision making, e.g., cost, religion, culture, spacing births or limiting family size, and marital status, to name just a few.

The introduction of the article was of interest in that the authors conceptualized contraceptive decision-making to have 4 components: 1) choice - an individual must first decide on whether to use a method of contraception and then the type of method to use, 2) consistency - an individual must be using the chosen method of contraception when engaging in intercourse, 3) accuracy - the method must be used correctly, and 4) continuity - a method must be used regularly. This conceptualization was taken from an article by Jaccard, et al.[2] I think component one (choice) should be expanded, i.e., what factors influence the choice, both for the individual and the methods available.(RJF)

1. Lamvu G, Steiner MJ, Condon S, & Hartman K. **Consistency between most important reasons for using contraception and current method used: the influence of health care providers.** *Contraception*, 2006;73:399-403.
2. Jaccard J, Helbig DW, Wan CK, Gutman MA, & Kritz-Silverman DC. **The prediction of accurate contraceptive use from attitudes and knowledge.** *Health Education Quarterly*, 1996;23:17-23.

Only 20% of DMPA or Pill Users Consistently Use Condoms

Recent studies have shown use of depot medroxyprogesterone acetate (DMPA) and / or hormonal contraceptives increase the risk for acquiring sexually transmitted diseases (STDs). The reason is that hormonal agents (in particular DMPA) work by thinning the vaginal and cervical mucosa, and increase cervical ectopy, i.e., these tissues then become more susceptible to infectious agents. Health professionals recommend dual use of condoms along with hormonal contraceptive agents. Researchers from Baylor College of Medicine conducted a study with 600 new users of DMPA (N=400) or the hormonal pill (N=200) to determine the correlates of condom use.[1] They administered a questionnaire that solicited responses about condom use, future use of condoms, level of risk for STDs, sexual behavior, risk-taking behavior, level of knowledge of contraceptive effectiveness, condom self-efficacy, and couple communication. After 3 months 426 users (71%) completed a follow-up survey.

The results showed only 31% (134) of the participants used condoms consistently during the 3 months prior to initiating DMPA or the Pill. After being on these hormonal agents for 3 months, only 20% of all participants were using condoms consistently. Not surprisingly, unmarried participants had a higher percent of consistent use of condoms than married participants. There was no difference in the frequency of condom use between the DMPA users and pill users; however, the power for determining statistical differences might have been too low. The best predictors for condom use were the male partner's positive attitude to condom use and the woman user's belief that condom use was important even when using another form of contraception.

Comment

Researchers recommendations for increasing condom use included: increasing male partner involvement, better educating women (e.g., about how to manage lack of spontaneity and reduction of sensations), increasing communication skills, and having couple-based programs. These latter 2 items should be of interest to advocates of NFP because communication skills and couple-based programs are central to NFP use. I am not sure how women who have multiple partners would fit into this recommendation or even what these researchers defined as "monogamous partners." (RJF)

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1. Sangi-Haghpeykar H, Posner SF, & Poindexter AN. **Consistency of condom use among low-income hormonal contraceptive users.** *Perspectives on Sexual and Reproductive Health*, 2005;37:184-191.

INFERTILITY

Fertility and Infertility among Latinos and Mexican Immigrants

Researchers from the University of California-San Francisco conducted a qualitative study to understand the experience of infertility among low-income Latinos.[1] The researchers interviewed 118 Latinos (86 females and 30 males) who sought help for infertility. Infertility is often overlooked in the Latino poplation because of their overall high fertility rate. A common theme they discovered from the interviews was "familismo" (i.e., family, children, and family values) is central to their culture and that having and raising children is a primary expectation for both women and men. Not being able to have a child is considered a failure. The Latino women in this study indicated they would seek to have a child until menopause. Because many of the respondents were low-income, they could not afford expensive infertility treatments, and many sought alternative humoral and folklore medical practices.

Another qualitative research study was conducted by researchers at the University of North Carolina at Chapel Hill, to determine Mexican immigrant women's attitudes toward planning pregnancy and factors that influence their fertility preferences.[2] They conducted in-depth interviews with 11 Mexican migrant workers in North Carolina. These researchers, like the researchers in the previous study, found a strong familistic orientation. The respondents' primary consideration was the ability to give their children a good life and the ability to enjoy their family. They found that migrant women had a strong motivation to plan their families.

Comments

Neither article mentioned Natural Family Planning as a means of family planning among these groups. The Latinos and Mexican migrants view children as a central part of family life and central to the meaning of what it means to be a man and woman. These two populations would benefit from understanding their fertility and the use of NFP either to plan or avoid pregnancy. I would also contend that fertility awareness would be a very inexpensive first line method to help with infertility. (RJF)

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One Day of Sexual Abstinence Recommended for Men with Low Semen Quality, but Sperm and Semen Quality Significantly Lower in Men Over 45 Years of Age

Recommendations for frequency of intercourse for couples with infertility problems are often a point of discussion and difference of opinion. Of particular concern is the decrease in sperm and semen quality with frequent intercourse patterns. Researchers from the department of obstetrics and gynecology at Ben-Gurion University in Israel recently con-

ducted a retrospective study with 9,489 semen analysis samples to evaluate the relationship between sexual abstinence and characteristics of semen.[1] These semen samples came from 6,008 patients that attended their infertility clinics. All semen samples were graded on WHO standards (i.e., semen volume, sperm concentration, percentage of motile and normal sperm morphology, total sperm count, and sperm count according to the number of days of abstinence). They found the peak in sperm motility to be after only one day of abstinence, while other semen values peaked from 0-2 days of abstinence. The researchers recommended that the best semen samples come after one day of abstinence.

Comment

These recommendations were for men who had male factor infertility and were requested to provide a semen sample for analysis. I am not sure if this article's recommendations would apply to frequency of intercourse patterns for couples trying to achieve pregnancy. Obviously intercourse patterns need to coincide with the 6-day fertile window and the peak in cervical mucus. A related study was conducted by US researchers with the lead author from Tulane University School of Medicine.[2] They collected semen samples from 1,174 men and compared these samples to the WHO reference ranges. The mean age of the men participants was 52.9 years (range 45-80). They found only 46% of the participants had semen and sperm values that either met or surpassed WHO standards. (RJF)

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2. Hellstrom WJG, Overstreet JW, Sikka, SC, et al. **Semen and sperm reference ranges for men 45 years and older.** February 1, 2006, *Journal of Andrology*. (Published ahead of print).

POSTPARTUM

Follicular Growth During Lactational Amenorrhea Higher than Early and Mid-Follicular Phases of Menstrual Cycle

Chilean researchers recently conducted a study to compare follicular development and hormonal profiles during lactational amenorrhea (LA) with follicular development during the early and midfollicular phases after the first postpartum menses.[1] The researchers recruited 22 healthy nursing women from a maternity ward in Santiago, Chile, who were between 18-33 years of age, parity 1-3, and had a normal pregnancy, and a vaginal birth. Of these 22 women, 10 were still totally breastfeeding at 60 days postpartum and were able to complete the study. All 10 were exclusively breastfeeding on demand. Serum hormone levels of (FSH, LH, estradiol, progesterone, inhibin A & B, and Pro-alpha C) were drawn between 60 and 89 days postpartum (the LA phase) and between days 1-4 of the second and third menstrual cycle post-partum (i.e., the early follicular phase or EFP) and days 7-10 (the mid-follicular phase or MFP). After 60 days postpartum the 10 participants were examined twice a week with transvaginal ultrasound to track follicles > 3 mm in diameter.

The findings showed significant follicular growth during the LA phase, and in fact the follicles observed in the LA phase were significantly larger than in the early follicular phase (EFP) and the mid-follicular phase (MFP) of the first and second menstrual cycle post LA. The estradiol levels were similar during LA, EFP, and MFP. In comparison with the EFP and MLP, LA is associated with higher prolactin levels, normal or slightly elevated FSH and LH and increased number and size of follicles without a parallel increase in estadiol, inhibin B

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and Pro-alpha C. The authors concluded that there was a disassociation between follicular activity and follicular hormonal activity during LA.

Comment

Of interest, researchers found that when the 10 participants had their first menses, the breastfeeding episodes per 24 hours were less than 50 percent of the episodes at 60 days post partum. This number could possibly be a numerical marker of when to predict the first menses, i.e., could simply counting the number of breastfeeding episodes during LA from day 60 on - and when it decreases less than 50% this would be a marker for predicting the first menses? This would be an easy way of predicting the first ovulatory cycle for those using natural methods of family planning. (RJF)

1. Velasquez EV, Trigo RV, Creus S, Campo S, & Croxatto HB. **Pituitary-ovarian axis during lactational amenorrhoea. 1. Longitudinal assessment of follicular growth, gonadotrophins, sex steroid and inhibin levels before and after recovery of menstrual cyclicity**. *Human Reproduction*, 2006;21:909-915.

UNDER THE MICROSCOPE

Knowledge of Fertility Low Among University Students and General Public

Couples in the United States, Europe, and other Westernized countries are postponing childbirth to later ages, a median age of 29 for women and 31 for men. Reasons given for delaying childbirth include education, career development, and having a stable relationship. However, delaying childbirth has implications. After the age of 35, women's fertility declines considerably, and after 40 men's fertility also contributes to this decline.

The American Infertility Association Society recently surveyed 12,000 women about their knowledge of fertility and found only one respondent answered all questions of their 15 item fertility survey correctly.[1] Furthermore, 88% overestimated the age at which fertility declines significantly (i.e., 35 years) by 5 to 10 years. This survey demonstrated a lack of knowledge among US women about fertility. Many of the women participants were surprised that fertility rapidly decreases after the age of 35 and were angry that they were not given this information. Knowledge of fertility is essential for career and family planning.

Researchers from Uppsala University in Sweden conducted a study among 222 female and 179 male randomly selected University students about childbirth, attitudes to parenthood, and fertility awareness issues.2 The researchers developed and validated a 56 item questionnaire that included items on; 1) demographics, 2) intention to have children, 3) importance of having children, 4) behavioral intention in case of infertility, 5) conditions of importance for becoming a parent, 6) perceived life changes with becoming a parent, and 7) awareness of fertility. The intent was to investigate the differences between men and women university students on these issues.

The Swedish researchers found that both men and women had positive attitudes about parenthood and having children — women slightly more than men. The average number of children they wished to have is two, with women wanting slightly more then men. Women students, however, had more concerns than men in regard to balancing career, work, and children. They also found 22% of the women and 35% of men thought that women were most fertile after 25 years of age. Furthermore, 46% of the women, and 63% of the men thought that the marked decrease in female fertility occurred after 40. Further, 73% of the women and 62% of the men thought that a 25 year old woman who has intercourse around the time of ovulation has between a 50-100% chance of achieving pregnancy - i.e., in the first menstrual cycle of trying.

What most concerned the researchers is that many (about 50%) planned on having children after age 35, when fertility is declining. In other words the students were not sufficiently aware of the age related decline in fertility, and the researchers considered them at risk for involuntary infertility.

Investigators at an infertility clinic in Auckland, New Zealand, observed in their practice that couples often have a poor understanding of their fertility even though they have been trying to conceive for over two years.[3] In order to validate their observations, they conducted a study in which they hypothesized that less than 50% of menstruating women, with a history of at least two years of infertility, would have an adequate understanding about the fertile time of their menstrual cycle. The investigators defined fertility awareness as knowledge of the peri-ovulatory endocrine process and the natural physiological markers associated with it, i.e., changes in cervical mucus and the post-ovulatory shift in basal body temperature.

To test their hypothesis, the investigators administered a 15 item questionnaire designed to determine level of knowledge about the fertile time (and the optimal time to have intercourse in order to get pregnant) to 90 women that attended the New Zealand National Women's Fertility clinic over a three month period. The questionnaires were graded (on a scale of 0-6, with a higher score indicating more knowledge of fertility) by two independent NFP teachers. A score of 4 or more was determined to be the cut-off for indicating adequate knowledge of fertility.

Of the 90 women who responded to the questionnaire, 80 were ovulatory and thus had changes in cervical mucus and BBT. Of these 80 respondents only 26% had a score of 4 or greater. Therefore, the investigators' hypothesis that less then 50% of subjects would have an adequate understanding of their 'fertile time' was supported.

The investigators also implied that providing infertile couples with information about fertility awareness will be an empowering experience for the couples in an often disempowering experience of infertility, and that knowledge of the fertile time will be more cost effective and will aid in the accurate timing of infertility tests. The authors recommended incorporating NFP trained professional nurses in tertiary infertility clinics to rectify the lack of knowledge of fertility.

Another study conducted through the University of Pavia, Italy, involved surveying 9,441 women of reproductive age from 13 countries about their knowledge of the vagina.[4] The intent behind the study is that women should have correct knowledge about their vagina because it is important for sexual, reproductive, and general health. The study was essentially funded by Organon, the manufacturers of NuvaRing. This company had an interest in the study since the NuvaRing is a vaginally delivery form of hormonal contraception. The vaginal knowledge survey included items on personal attitudes about the vagina, society's attitudes, perceptions about the vagina, vaginal facts, and vaginal behaviors. The surveys were conducted through the internet and took about 25 minutes to complete.

Some of the results include:

1. 95% of respondents felt that it was important to be well informed about the vagina.
2. 66% of respondents agreed that vaginal health does not receive the attention it deserves.
3. 75% of respondents have experienced a vaginal health problem.
4. 65% felt that society had too many misconceptions about the vagina.
5. 62% felt that vaginal hygiene products contributed to vaginal health.
6. 73% of the respondents used or regularly used tampons during their menses.
7. Less than 50% felt comfortable talking with a health care provider about vagina related issues.

The researchers concluded that more open communication about the vagina is needed in order to empower women about their bodies, freedom of choice, and contraceptive decision-

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making. This has relevance to NFP because NFP teachers who provide vaginal-mucus based methods of NFP usually describe and talk about the vagina. Also, many NFP methods inform women about proper vaginal hygiene and in a sense monitor vaginal health through NFP record keeping. This study seemed to be primarily a marketing tool for NuvaRing. There was no mention as to how many women did not respond to the survey other to say that they were extracted through a validated web database.

Comment

I was a guest lecturer on the topic of NFP at two undergraduate theology courses this past semester. As an introduction to the lecture, I administered a 10 item fertility quiz to the students and then discussed the answers. Many of the items were similar to the fertility quiz developed by the Swedish researchers. The students in the undergraduate theology courses did no better in answering the questions correctly than the Swedish college students. Not one of the 71 students (37 females and 35 males) answered all 10 items correctly. The average score was 3 out of 10. Although 47% knew women are most fertile between the ages of 20-24, only 7% knew that there was a slight decrease in fertility from the ages of 25-29, and only 12.5% knew that there was a marked decrease from 35-39 years. Other remarkable results: only 2.8% knew there was only a 6 day fertile window, 53% thought the egg lived 2-3 days, and only 8% knew that profuse, clear, slippery cervical mucus was a sign of fertility.

This small class quiz and the 3 published studies listed attest to the lack of knowledge about fertility among women and college students. Although society is awash in sexuality through the media, and sex education classes are normative in grade and high-school curricula, the focus of the sexuality is often on the basics of reproductive anatomy and physiology and later contraceptives and sexually transmitted infections. However, there is little information about fertility, environmental effects on fertility, the effects of aging and the decline of fertility, and what can be done to protect fertility. Young adults need to know the facts about fertility, the ages of greatest fertility, the age of decline, and how to protect their fertility so that they can make informed decisions about marriage, careers, and children. So too, couples with infertility problems, need to have knowledge of fertility and how to identify their fertile window in order to maximize their chances of achieving a pregnancy. (RJF)

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Current Medical Research, a supplement of ***NFP Forum (Diocesan Activity Report)***, is published biannually. Richard Fehring, DNSc, RN is the editor. Theresa Notare, MA, is the managing editor. The purpose of the supplement is to serve the Roman Catholic diocesan NFP programs of the United States through providing them with up-to-date information on research within the field of fertility, family planning, and related issues. The diocesan NFP teacher should be equipped to understand the various methods of contraception and be able to explain their incompatibility with the practice of the natural methods of family planning.

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