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Recommended Citation

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The Linacre Quarterly, Vol. 88, No. 1 (February 1, 2021): 42-55. [DOI](#). This article is © Catholic Medical Association and permission has been granted for this version to appear in [e-Publications@Marquette](#). Catholic Medical Association does not grant permission for this article to be further copied/distributed or hosted elsewhere without the express permission from Catholic Medical Association.

Natural Family Planning and Marital Chastity: The Effects of Periodic Abstinence on Marital Relationships

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Abstract

Marital chastity is the practice of periodic abstinence with use of natural family planning (NFP). The purpose of this study was to determine the influence of the most common methods of contraception (female sterilization, oral contraceptive pills, and condoms) and NFP on divorce/separation and cohabitation rates among reproductive age women. The study involved an extensive review of the literature on the effects of practice of NFP on marital dynamics and a statistical analysis of 2,550 ever-married women in the (2015–2017) National Survey of Family Growth data set. Importance of religion and frequency of church attendance were included in the analysis. With ever-use of NFP, 14 percent were divorced or separated, and 27 percent to 39 percent were divorced or separated with ever-use of oral contraceptive pills. Stepwise logistic regression indicated that ever-

use of contraception was associated with increased odds of divorce or separation (odds ratio [OR] = 2.05; confidence interval [CI]: 1.96–2.49) and cohabitation (2.95, CI: 2.20–3.95). Ever-use of NFP yielded 58 percent lower odds for divorce or separation. Frequent church attendance was associated with lower odds of divorce or separation and cohabitation. Although there are lower odds of divorce among NFP users, the reason might be due to their religiosity.

Summary:

This study showed that ever-use of natural family planning (NFP) among ever-married women was associated with 58 percent lower odds of divorce than among women who never-used NFP. Ever-use of contraceptive methods was associated with two times the odds of divorce and four times for cohabitation compared to those women who never-used those methods. Use of periodic abstinence with NFP is the practice of marital chastity and is thought to strengthen the marital relationship.

Keywords

Cohabitation, Contraception, Divorce, Marriage, Natural family planning

Self-discipline...is a shining witness to the chastity of husband and wife and, far from being a hindrance to their love of one another, transforms it by giving it a more truly human character...it brings to family life abundant fruits of tranquility and peace.

Pope Saint Paul VI—*Humanae Vitae*

Natural family planning (NFP) refers to methods utilized to monitor a woman's naturally occurring biological markers of fertility. These natural biological markers are used to estimate the fertile and infertile phases of the menstrual cycle. Knowledge of the fertile and infertile phases of the menstrual cycle provides couples with information they can use to achieve or to avoid pregnancy. Abstinence from sexual intercourse is practiced during the fertile times of the menstrual cycle if a couple wishes to avoid pregnancy, and sexual intercourse is performed during the fertile phase if they wish to achieve a pregnancy. The practice of periodic abstinence (PA) during the fertile phase of the menstrual cycle with the use of NFP is essentially the practice of marital chastity.

Cardinal Joseph Suenens (1962, 97–105) in his book *Love and Control* reminded us that all persons are obliged to practice sexual self-control before marriage, after marriage, or even if a person never marries. He said that too many people think that an unmarried person's obligation to be chaste ends with marriage. However, there is chastity in marriage and chastity outside of marriage. A celibate's sexual life is ordered by "chastity's forbidding anything contrary to the virtue." In marriage, "chastity orders the couple's sexual life by placing it in the service of conjugal love." The *Catechism of the Catholic Church* (CCC) defines chastity as "the successful integration of sexuality within the person and thus the inner unity of man in his bodily and spiritual being" (CCC 561). Two constitutive elements of chastity are self-gift, manifest by all as friendship and in marriage as a lifelong fidelity to another, and self-mastery, the lifelong effort to place our bodily urges at the service of a higher calling (CCC 1994, 563–64). Pope Saint John Paul II indicated that use of contraception in marriage "contradicts the full truth of the sexual act at the proper expression of conjugal love and is opposed to the virtue of chastity" (*Evangelium Vitae* 1995 Section 13). In this context, use of NFP within marriage helps couples to maintain the proper expression of conjugal love.

Catholics are not alone in promoting the benefits of NFP and PA. Dr. Kyusaku Ogino (1934, 78–80), one of the original developers of a calendar-based method of NFP or what was eventually called "rhythm," also had an intuitive understanding of using PA within married life. He was a non-Catholic obstetrician/gynecologist from

Japan. He said PA and the development of sexual self-control can help a person be more open to the needs of one's spouse. If one can quiet his or her needs, then one can be open to the needs of another, particularly one's spouse. Quieting one's physical desires can help a person to be aware of emotional times in the life of the spouse. Dr. Ogino referred to the fertile phase of the menstrual cycle as a holy time.

Developers and promoters of other NFP methods maintain that the practice of PA and the resultant broader expression of sexuality are dynamics that can strengthen marriage (Hilgers 1991, 51–56). The often cited positive dynamics of practicing NFP include a greater understanding of human fertility and the menstrual cycle, increased communication between the spouses on family planning matters and how to best express sexuality, increased self-mastery, increased intimacy, an appreciation for intercourse, and increased spiritual well-being (McCusker 1977, 335–39; Tortorici 1979, 199–206; Borkman and Shivanandan 1984, 61–65; Fehring and Lawrence 1994, 22; Rodriguez and Fehring 2012, 229–33). Others attest that the practice of NFP is stressful to the married couple and detrimental to marriage due in large part to the perceived lack of spontaneity, difficulty with PA, and fear over an unintended pregnancy (Fragstein, Flynn, and Royston 1988, 75–76; Klann, Halweg, and Hank 1988, 68; Finley 1992, 206–7; Oddens 1999, 280–83).

Pope Saint John Paul II (1984, 62–67) reflecting on the teachings of the encyclical *Humanae Vitae* said that marital love is, by its nature, linked with chastity that is manifested as mastery over oneself, that is, continence, and, in particular, PA. Pope Saint Paul VI (1968, 16–17) in his encyclical *Humanae Vitae* indicated that the practice of PA, required with NFP methods, would result in many benefits for the marital relationship including “it [PA] favors attention for one's partner, helps both parties drive out selfishness ... and deepens their sense of responsibility. By its means, parents acquire the capacity of having a deeper and more efficacious influence in the education of their offspring” (*Humanae Vitae* 21).

Pope Saint Paul VI did not provide scientific evidence for his assertion that NFP can be helpful for marriage but did call on scientists to provide evidence for the effectiveness of methods of NFP. Effectiveness of NFP methods can be evaluated not only based on how effective they are in helping couples avoid pregnancy but also how the practice of PA and marital chastity affects the marital bond.

In this article, we will review the research on how PA and NFP impact marital life. This article will have two parts. In the first part, a literature review will be conducted to assess marital dynamics in couples using NFP and PA, including method satisfaction, sexual intimacy, intercourse frequency, self-esteem, spiritual well-being, and divorce. The second part of this article will be a new statistical analysis illustrating PA and NFP are associated with lower odds of divorce or separation and lower odds of cohabitation than commonly used contraceptive methods among ever-married women of reproductive age as found in the most recent (2015–2017) Centers for Disease Control and Prevention's (CDC) National Survey of Family Growth (NSFG).

Part 1: Literature Review of the Marital Benefits of NFP

Satisfaction with NFP and Whether Helpful for Married Life

Research on the marital, sexual, and spiritual dynamics of NFP provides evidence that the use of NFP can be beneficial to marital life. Marshall and Rowe (1970, 16–18) reported one of the first studies of modern NFP methods (respondents employed a basal body temperature method) and discovered that 74 percent of husbands and 75 percent of the wives found the use of NFP to be helpful to marriage, despite 40 percent of husbands and 22 percent of wives reporting they often had difficulty with PA. A similar study among English and Welsh couples found that 75 percent of the wives felt NFP was helpful to marriage (Fragstein, Flynn, and Royston 1988, 76). Grace Boys (1988, 62) reported a study of female participants who were from five NFP teaching centers in Oregon in the early 1980s in which 72 percent reported satisfaction with “my usage to avoid pregnancy.” However, the only requirement of respondents was to have attended one NFP class.

Rhomberg, Rhomberg, and Weissenbach (2013, 67–68) surveyed over 1,300 households from a membership list of a German-speaking NFP organization in Europe. While the response rate was only 43 percent, a majority (61 percent) felt NFP enriched their relationship and almost 82 percent agreed with the statement “Do you experience—despite the higher demands—abstinence as a positive?”

Fehring (2016, 107–11) repeated the survey used by Marshall and Rowe among 334 ovulation method or Creighton model users in the early 2000s. In this cohort, 74 percent of respondents were current users of NFP, and although approximately 60 percent of respondents stated they sometimes had difficulty with abstinence, 80 percent of men and 85 percent of women felt the use of NFP helped their marriage.

Qualitative research using this same cohort found that most (74 percent) couple users of NFP are satisfied with use of NFP; find PA is manageable, increased communication, shared responsibility, increased appreciation of sexuality; and that NFP enhances their spiritual well-being as well as their sexual desire (VandeVusse, Hanson, and Fehring 2003, 173).

More recently, Unsel et al. (2017, 4) used an online survey sent to NFP users from two major NFP organizations in the United States and seven European countries. Of the 6,827 Internet invitations (3,750 in United States and 3,077 in Europe), 2,560 completed the questionnaire which yielded a response rate of 37.4 percent. The authors found 64 percent of women and 74 percent of men felt NFP helped to improve their relationship, while <10 percent felt the use of NFP had harmed their relationship. Most women (62 percent) and men (63 percent) also felt that NFP improved their sex life, and 95 percent of women and 55 percent of men said using NFP has helped them to know their body better. Many of these responses came from couples who had experienced married life without NFP; 47 percent of the respondents had previously used contraceptives. The authors concluded that the use of NFP was consistently viewed as being beneficial to couples’ self-knowledge, their relationship, and satisfaction with frequency of sexual intercourse. These studies illustrate that positive data exist on the helpfulness of NFP for marital life although the evidence is at times poor quality.

Sexual Intimacy, Self-esteem, and Spiritual Well-being

Other indicators how the use of NFP can be helpful for married life is the enhancement of sexual intimacy, self-esteem, and spiritual well-being. Tortorici (1979, 199–205) compared the self-esteem of married Catholic couples using NFP to couples using contraception. He found while all couples had moderate to high levels of self-esteem, those couples using NFP scored significantly higher on self-esteem than those couples who used contraceptives or no method. However, his sample was small (fifteen NFP couples vs. thirty contraceptive couples), and twelve of the fifteen NFP couples were selected by convenience. Tortorici found it difficult to find couples using NFP in the parishes in which he sought participants for his study. Small sample size and convenience sampling are common issues in this review of the literature.

Oddens (1999, 281–82) reported a more recent study in which she surveyed 1,466 German women on the physical and psychological effects of their past and current use of five common methods of family planning, that is oral contraception (OC), condoms, intrauterine device (IUD), NFP, and sterilization. Of these respondents 1,303 had past or current use of OCs, 996 had used condoms, 428 had used NFP, 342 had employed IUD, and 139 were sterilized. NFP scored as good or better in five of the twelve indicators. Specifically, women currently using some form of NFP ($n = 24$) had fewer health concerns, were less irritable, less depressed, had high levels of sexual pleasure, and a higher sex drive than with other methods of contraception. However, the very low number of current NFP users surveyed limits the generalizability of these findings.

Beyond the limitations of very few current users and only representing a cross section of time, the Oddens’ study was biased in that the questions asked in that survey were more adapted to the dynamics of contraception than those of NFP. For example, there were no questions on whether the method of family

planning increased understanding of fertility, self-control, communication, trust, intimacy, respect for spouse, or spirituality (expressed benefits of NFP outlined in other literature reviewed herein). However, research would be needed to verify whether this is so.

To this end, Marquette University researchers conducted two studies which compared forty-four married couples who were currently using some form of contraception with forty-four married couples currently using some form of NFP (Fehring, Lawrence, and Sauvage 1989, 231; Fehring and Lawrence 1994, 23). The variables of self-esteem, intimacy, and spiritual well-being were compared between the two groups using instruments that have reported evidence for their validity and reliability and then verified through open-ended interviews with each respondent couple. The results showed that the NFP couples had statistically higher levels of spiritual well-being (both religious and existential); higher levels of self-esteem; and higher levels of intellectual, recreational, and sexual intimacy.

Although the subjects of these two studies were either matched (on income and education) or randomly selected from the same pool of couples, the findings could result from the fact that couples in stronger relationships choose to use NFP rather than from NFP strengthening the relationship. There could also be religious, cultural, economic, and other factors that influenced the differences. Regardless of causality, these NFP users exhibited higher levels of self-esteem, intimacy, and spiritual well-being than couples using contraception.

Barroilhet et al. (2018, 159–62) employed the Dyadic Adjustment Scale (DAS), a validated instrument that measures relationship functionality, to compare sixty-nine Chilean couples using NFP to sixty-nine couples using contraception (primarily OCs and IUD) in a cross-sectional study. After adjusting for age, socioeconomic status, time in relationship, and degree of religious commitment, they found NFP users had a significant 47 percent greater likelihood of having a functional DAS score compared to those using contraception, and continued use of NFP was associated with higher DAS scores, corresponding to 1 percent per month of NFP use. When asked, 62 percent of couples using NFP felt it had improved their relationship compared to 12.5 percent of couples using contraception: while 1.4 percent of couples using NFP felt it had worsened their relationship versus 22.5 percent of couples using contraception.

Frequency of Sexual Intercourse

Given the need for PA with NFP, frequency of sexual intercourse may be an important variable in the comparison of the use of NFP with contraceptive methods. However, there are few direct comparative studies. There are cohort studies of NFP and contraceptive methods that can provide some idea of the comparative frequency of intercourse.

The mean number acts of intercourse recorded in a five-country World Health Organization (WHO 1987, 768) NFP study was 4.8 per month (with a standard deviation of 2.4). In a randomized prospective study, Fehring and Schneider (2014, 528) found among 197 women using a hormonal monitor to estimate fertility in a method of NFP had a mean of 4.2 acts of intercourse per menstrual cycle, slightly, but significantly more than those 160 women using a mucus-only method of NFP (4.05 acts per cycle). A study of intercourse frequency was conducted by scientists at the Georgetown University Institute of Reproductive Health and found among users of a simple calendar-based method of NFP that they had on average 5.5 acts of intercourse per month (Sinai and Arévalo 2005, 5–6). They also cited studies in which reported the frequency of intercourse for couples using contraception is about six per month (see Stover et al. 2001, 32–37). The frequency of intercourse among a study of English and Welsh couples using NFP was 6.9 acts on average per menstrual cycle; however, this was a perceived average rather than an actual count (Fragstein, Flynn, and Royston 1988, 73)

Taken collectively, these data suggest couples using NFP have intercourse about once a week or more. A technical report from the General Social Survey found married Americans self-report an average intercourse frequency of 66.3 per year (1.2 times per week) and that the age of the couple significantly influences this rate (Smith 2006, 12–14). Absent robust comparative data, the limited cohort data suggest that NFP users do not differ markedly in frequency of intercourse compared to contraceptive users.

Satisfaction with, rather than frequency of, intercourse while more subjective, may be a more important outcome variable to individuals. The World Health Organization (WHO) study (1987, 768) reported on average 84 percent of the women participants and 67 percent of their male partners were satisfied with the frequency of intercourse. However, there was relatively wide range across the five study centers; approximately one third of women in the Western study centers (Dublin and Auckland) stated they preferred more frequent intercourse, while less than 5 percent of women from Bangalore, San Miguel, or Manilla preferred more frequent intercourse. The recent US and European study of 2,650 NFP users found that 75 percent of women respondents and 73 percent of men said they were either “satisfied” or “very satisfied” with their frequency of sexual intercourse (Unsel et al. 2017, 4). A comparative study on marital functioning conducted among Chilean couples found couples using artificial contraception self-reported significantly more intercourse acts per month (9.1 vs. 6.9, $p < .001$), but sexual satisfaction scores were no different ($p = .695$) (Barroilhet et al. 2018, 159–62).

Furthermore, other studies have shown that the most frequent days of intercourse are on the weekend when stress of life is lower (Udry and Morris 1970, 252–53). A recent large study ($N = 30,645$) also found the relationship between well-being and frequency of intercourse among partnered couples is curvilinear and no longer significant beyond a frequency of once a week (Muisse, Schimmack, and Impett 2016, 295). After that satisfaction plateaus or decreases. More intercourse does not bring greater satisfaction. The data on intercourse frequency are too limited to draw a firm conclusion, other than individuals’ preferences are a key factor.

Influence of NFP and Contraception on Divorce:

The question of how the use of NFP and other methods of family planning impact marital relationships (and in particular divorce) is a question of importance to health professionals and those involved with marriage preparation and counseling. One of the often-repeated comments by NFP providers is that there is less divorce among couples who use NFP. However, there is very little evidence and scant research to validate this statement.

Wilson (2005, 195–210) reported a study in which she compared the divorce rate of a convenience sample of 505 Catholic women users of NFP, with a representative sample of 10,471 women in the 1995 NSFG data set and found 3 percent of the 505 NFP users were divorced and 15 percent were divorced among the NSFG participants who were using contraceptive methods. A similar study found 3.1 percent of the 1,131 German users of the symptothermal method of NFP were divorced (Rhombert, Rhombert, and Weissenbach 2013, 67–68). This study, however, only had a 43 percent response rate, that is, there is no idea of the divorce rate of the remaining 57 percent. Both the US Wilson study and the German study were not population based and thus lack external validity.

Fehring (2013, 14) reported results of a study to determine the influence of ever-use of various family planning methods (i.e., OCs, sterilization, and NFP) and frequency of church attendance on the divorce rates of sexually active Catholic women from the 2006–2010 NSFG. There were 1,502 Catholic women in the 2006–2010 NSG or approximately 12 percent of the total population. Among the Catholic women who had ever-used NFP, only 9.5 percent were currently divorced, compared with 18.3 percent who had never-used NFP.

The 2013 Fehring study was limited to Catholic women; therefore, another study was conducted among all ever-married women from the 2006–2010 NSFG to determine the influence of ever-use of the most common family

planning methods (i.e., OCs, sterilization, and condoms), the ever-use of abortion, the ever use of NFP and rhythm, importance of religion, and frequency of church attendance on the divorce rate (Fehring 2015, 277–78). The variables of importance of religion and frequency of church attendance were included in this study since they are variables that have an influence on sexual activity outside of marriage, early sexual debut, and use of abortion (Fehring and Ohlendorf 2008, 406; Fehring 2015, 277; Fehring, Bouchard, and Meyers 2017, 168; 2018, 217; Fehring 2019, 210).

The study involved 5,530 reproductive age women in the (2006–2010) NSFG who were ever-married. Among women who ever-used NFP, only 9.6 percent were currently divorced, compared with 14.4 percent who were currently divorced among the women who never-used NFP. The most dramatic findings from this study of ever-married, reproductive age women in the United States indicate that ever-use of the most frequent methods of family planning was associated with significantly increased odds of divorce compared with women who never have used those means of family planning. Sterilization (odds ratio [OR] = 1.67; 95 percent confidence interval [CI]: 1.42–1.97), vasectomy (OR = 1.74; 95 percent CI: 1.45–2.01), ever-use of OCs (OR = 1.73; 95 percent CI: 1.36–2.21), ever-use of condoms (OR = 2.2; 95 percent CI: 1.57–3.13), and abortion (OR = 1.88; 95 percent CI: 1.55–2.29) were all associated with significantly increased odds of divorce compared to women who had not engaged in these practices. Furthermore, ever-married reproductive age women who had low levels of religiosity (as expressed by less frequent church attendance) had greater odds of being divorced or separated.

A limitation of this study is that many other factors could contribute to or prevent divorce. Choice of family planning method, especially the use of NFP, is associated with fewer divorces, but this may be due to the religiosity of the woman and couple as well. This was reflected in the finding that frequency of church attendance was associated with reduced odds of divorce (OR = 0.63; 95 percent CI: 0.53–0.75). Another limiting factor is the rarity of women who have ever-used NFP (only about 4 percent of sexually active women) in the United States as compared to other family planning methods. So too, these results are based on ever-use of NFP or a contraceptive method and not on current use. Some of these NFP women could have used contraceptive methods in the past or are currently using sterilization or hormonal methods for family planning purposes. Future studies are needed that prospectively follow the use of NFP, other family planning methods, and divorce over time.

Part 2: New Statistical Analysis; Research Problem Statement, and Hypothesis

Although couples who use NFP and PA will have struggles doing so, past studies show most NFP couples express that the practice of PA is helpful (not harmful) for the marital relationship. However, most of these NFP satisfaction studies are cross sectional, not population based; have a low number of NFP participants; and findings cannot be generalized. The more rigorous studies that compare and match NFP users with contraceptive users provide more convincing results. These comparative studies, however, have limitations due to potential bias in selecting groups, and by not using random distribution, and as such, findings are not generalizable. Studies that utilize population-based data sets allow for generalizable results.

We now have available population-based data sets from a more recent population of ever-married reproductive age US women from 2015 to 2017. Furthermore, we can also include religiosity variables that have shown in the past to be preventive indicators for divorce, supportive of marital chastity, and healthy sexual practice among adolescents (Haglund and Fehring 2010, 261–67; Haglund et al. 2011, 273).

Based on this literature review, we hypothesize that there will be greater odds of divorce and cohabitation among those ever-married women who ever-used sterilization, the hormonal pill, and condoms as a method of family planning compared to women who never-used those methods. We also hypothesize that there will be

lower odds of divorce among ever-married women who ever-used NFP, attend church frequently, and feel that religion is important in their lives compared to those ever-married women who never-used NFP, do not attend church frequently, and do not feel that religion is important in their lives.

Method

The participants in this study were taken from the 2015–2017 Cycle of the NSFG data set. This cycle of the NSFG was designed and administered by the National Center for Health Statistics (NCHS), an agency within the US Department of Health and Human Services' CDC and contracted for implementation with social researchers at the University of Michigan. The NSFG uses a nationally representative, randomly selected sample of US reproductive age women. Underrepresented subpopulations, such as Hispanics, are over sampled. Interviews were conducted in person and take approximately eighty minutes to complete. Sensitive questions (such as the history of abortion) were asked through a self-paced computer-assisted interview program.

The overall response rate for the 2015–2017 NSFG was 66.7 percent for females. There are over 3,000 variables in the data set. The data set contains variables on current and ever-use of methods of contraception, NFP, and the variables "importance of religion," "church attendance," and marital status. There were 5,554 women in the NSFG between the age of fifteen and fifty, for this report we used the 2,582 women who were ever-married.

The independent or predictor variables for this study from the NSFG data set were ever-use of OCs, female sterilization, ever-use of condoms, and ever-use of NFP, oral hormonal contraceptives, sterilization, and condoms were used because they are the most frequently used methods of contraception in the United States.

The outcome variables were marital status (married, divorced, or separated at time of interview) and ever-cohabitation, that is, participants indicated that they ever-lived with a person of the opposite sex. The predictor variables chosen to represent religiosity were the variables of importance of religions and frequency of church attendance. The importance of religion variable was dichotomized from five possible answers in the NSFG into two categories, "important" (comprising "important" and "somewhat important") and "not important" (comprising the remaining answers). The variable frequency of church attendance was collapsed from nine possible answers into two categories: (1) frequent church attendance (more than once a week or once a week) and (2) infrequent church attendance (the remaining seven options). The dichotomous dependent variables for this study were divorced or separated (compared to not divorced or separated) and ever-cohabitated or never-cohabitated. We also included two potential confounding variables of highest educational grade and level of poverty (expressed in the NSFG as a percentage of the poverty level).

Descriptive statistics were calculated as means, standard deviation, and 95 percent confident intervals for continuous variables and frequency and percentages for the dichotomous variables. Chi square tests and cross tabs were performed to obtain ORs for categorical variables. To control for increased error rates with multiple testing, the Bonferroni correction tested each hypothesis with a p value average of .008 being considered significant. Forward stepwise logistic regression was performed to obtain ORs and 95 percent CIs for each primary outcome. The combination of ever-use of OCs, female sterilization, condom use, NFP, frequency of church attendance, and importance of religion was analyzed in separate stepwise regressions with divorce or separation and currently cohabitating as the dependent variable. In addition, the confounding variables of level of education and poverty level were included in the stepwise regression models.

Statistical analysis was performed by use of the Statistical Package for Social Sciences (IBM SPSS version 26). Only variables that are publicly available in the 2015–2017 NSFG data set were used for analysis for this report.

Results

Demographics

The mean age of the 2,582 ever-married women participants in the 2015–2017 NSFG data set was 36.8, 70.8 percent of whom were married, 19.7 percent divorced, 7.8 percent separated, and 1.7 percent widowed. The majority (51.4 percent) listed their religion as Protestant, 1 in 5 were Catholic, nearly 18 percent had no religion, and 10.1 percent other religions. The mean years of education was 14.35 (range 9–19), and the mean percentage above the US poverty level was 267.47 (range 5–500; see Table 1).

Table 1. Demographics of Ever-married Women in the 2015–2017 National Survey of Family Growth.

				95 Percent CI		
Demographics	Mean	SD	Range	Lower	Upper	
Age	36.88	7.646	18–50	36.57	37.19	
Educational grade level ^a	14.35	2.715	9–19	14.24	14.45	
Poverty level ^b	267.47	166.64	5–500	164.144	169.177	
Religion	Protestant	Catholic	None	Others		
<i>N</i> (%)	1,328 (51.4)	530 (20.5)	463 (17.9)	261 (10.1)		
Current marital status	Married	Widowed	Divorced	Separated		
<i>N</i> (%)	1,828 (70.8)	44 (1.7)	509 (19.7)	201 (7.8)		
Current method of contraception	Female sterilization	Birth control pill	Condom	NFP	Other	No method
<i>N</i> (%)	618 (24.2)	246 (9.6)	262 (10.3)	23 (0.9)	718 (27)	715 (28)
Ever use method of contraception	Female sterilization	Birth control pill	Condom	NFP		
<i>N</i> (%)	587 (22.7)	2,108 (81.6)	2,380 (92.2)	509 (19.7)		

^aHighest educational grade level achieved.

^bPercent of income above poverty level.

Current and Ever-use of Family Planning Methods

As shown in Table 1, the most common method of family planning was female sterilization; less than 1 percent of women were currently using NFP. Almost 20 percent (19.7 percent) of women reported ever-use of NFP; much larger numbers of women reported current and ever-use of other methods.

Divorce and Separation Percentages with Family Planning Methods

Women who had ever-used the hormonal pill had a divorce/separation rate of 28.2 percent (*N* = 595), for sterilization 39.4 percent (*N* = 231), for ever-used condoms was 27.7 percent (*N* = 660), and for ever-used NFP 14.0 percent (*N* = 100). The divorce (only) rate for the hormonal pill was 22.5 percent (*N* = 474), for sterilization 28.3 percent (*N* = 166), for condom use 21.9 percent (*N* = 523), and for NFP 14.1 percent (*N* = 72), and for rhythm use 16.4 percent (*N* = 72).

Odds of Ever Divorce or Separation by Chi Square Risk

Table 2 shows the ORs of divorce/separation by family planning method, religiosity, frequency of church attendance (i.e., church frequency), and importance of religion determined by chi square analysis and subsequent risk analysis. The significant variables were female sterilization, NFP use, and church attendance. Women who were sterilized showed two times the odds of being divorced or separated compared with women

who were not sterilized. Those women who have ever-used NFP had lower odds of divorce compared to those women who never-used NFP. Finally, those women who attended church at least once or more a week had lower odds of divorce compared to those women who attend church less frequently or not at all.

Table 2. Chi Square Coefficients, Odds Ratios, and 95 Percent CI by Cross Tabulation of Variables with the Variable “Divorce and Separation” among Ever-married Women in the 2015–2017 National Survey of Family Growth.

Variable	Chi Square	p Level	Odd Ratio	95 Percent CI	
				Lower	Upper
Oral contraceptions ^a	3.05	<.081	1.29	0.98	1.55
Sterilization ^b	55.55	<.001	2.05	1.69	2.50
Condom ^c	0.977	<.326	1.18	0.85	1.65
Natural family planning ^d	19.06	<.001	0.59	0.46	0.74
Church attendance ^e	35.90	<.001	0.56	0.46	0.67
Religion ^f	4.74	<.030	0.83	0.69	0.98

^a Ever use of hormonal birth control pill.

^b Female sterilization.

^c Ever use of condom.

^d Natural family planning or rhythm.

^e Frequency of church attendance.

^f Importance of religion.

Odds of Separation and Divorce by Stepwise Logistic Regression

The same variables as in Table 2 were used to predict the odds of divorce and separation with a forward stepwise logistic regression equation, that is, the predictor variables were ever-use of OCs, female sterilization, condom, NFP, church frequency, and importance of religion. The dependent variable was currently divorced or separated. The regression produced five steps with significant model coefficients ($p = .001$ to $.004$) and with a 74.4 percent prediction. The fifth step is reported in Table 3. The variables with a significant ORs were ever-used OCs (OR = 1.4; $p < .004$), sterilization (OR = 1.70; $p < .001$), NFP (OR = 0.69; $p < .004$), church attendance (OR = 0.56; $p < .001$), and poverty level (OR= 1.00, $p < .001$). The predictor variables of condom use, importance of religion, and education level were not in the final models. Table 3 shows that ever-used OCs increased the odds of divorce or separation by 40 percent and female sterilization by 60 percent; ever-used NFP decreased the odds of divorce or separation by 31 percent and church attendance by 49 percent compared with women who are not sterilized, never-used OCs, who never-used NFP, and rarely attend church services.

Table 3. Odds Ratios and 95 Percent CI for Predictor Variables Produced by the Final Model of Stepwise Logistic Regression on the Dependent Variable of Divorce and Separation among Ever-married Women in the 2015–2017 National Survey of Family Growth.

Variable	Coefficient	SE	p Level	Odd Ratio	95 Percent CI	
					Lower	Upper
Oral contraceptions ^a	.362	.127	<.004	1.44	1.12	1.84
Sterilization ^b	.452	.107	<.001	1.57	1.27	1.95
Natural family planning ^c	-.374	.128	<.004	0.69	0.54	0.86
Church attendance ^d	-.670	.104	<.001	0.51	0.42	0.63
Income ^e	-.004	.000	<.001	1.00	1.00	0.99
Constant	-.138	.137	<.314	0.87		

^a Ever use of hormonal birth control pill.

- ^b Female sterilization.
- ^c Natural family planning or rhythm.
- ^d Frequency of church attendance.
- ^e Percent of income above poverty level.

Odds of Cohabitation by Chi Square Risk

Those women in the NSFG data set who indicated that they ever-cohabitated with a member of the opposite sex had 2.44 (95 percent CI: 1.92–2.99) times the odds of being divorced than those women who never-cohabitated. The rate of divorce among the women who cohabitated was 32.5 percent ($N = 569$).

Table 4 shows the Chi Square coefficients and ORs of cohabitation based on ever-use of OCs, female sterilization, ever-used condom, ever-used NFP, frequency of church attendance, and importance of religion. The odds of ever-cohabitating is 1.99 times among those women with ever-used OCs, 2.95 times for ever-use of male condoms, and 1.74 times with ever-use of female sterilization compared with women who never-used these methods of family planning. Women who felt that religion was important in their lives or who attended church frequently had 64 percent to 68 percent lower odds respectively of ever-cohabitating compared to those who saw religion as unimportant or who had infrequent church attendance. Ever-used NFP directionally reduced the odds of cohabitation but did not reach statistical significance.

Table 4. Chi Square Coefficients and Odds Ratios and 95 Percent CI by Cross Tabulation of Variables with the Variable “Cohabitation” among Ever-married Women in the 2015–2017 National Survey of Family Growth.

Variable	Chi Square	P Level	Odds Ratios	95 Percent CI	
				Lower	Upper
Oral contraceptions ^a	44.70	<.001	1.99	1.62	2.44
Sterilization ^b	29.32	<.001	1.74	1.45	2.22
Condom ^c	56.64	<.001	2.95	2.20	4.00
Natural family planning ^d	5.03	<.025	0.79	0.65	0.97
Church attendance ^e	177.10	<.001	0.32	0.27	0.38
Religion ^f	128.90	<.001	0.36	0.30	0.43

^aEver use of hormonal birth control pill.

^bFemale sterilization.

^cEver use of condom.

^dNatural family planning or rhythm.

^eFrequency of church attendance.

^fImportance of religion.

Odds of Cohabitation by Use of Stepwise Logistic Regression

ORs were also calculated with stepwise multiple logistic regression with the same predictor variables we used for divorce or separation, but the dependent variable was ever-cohabitation. All the predictor variable coefficients in the equation were significant ($p < .001$) with a 72.4 percent predictive percentage. There were six steps in this analysis. Table 5 shows the result of the sixth step model. This regression showed greater odds of cohabitating with ever-use of OCs (OR = 1.61; $p < .001$), sterilization (OR = 1.74; $p < .001$), and condom use (OR = 2.66; $p < .001$) and a lower odds of cohabitation with frequent church attendance (OR = 0.47; $p < .001$), importance of religion (OR = 0.53; $p < .001$), and education level (OR = 0.92; $p < .001$). The variables of ever-used NFP and poverty level were not in the final regression model.

Table 5. Odd Ratios and 95 Percent CI for the Predictor Variables Produced by the Final Model of Stepwise Logistic Regression on the Dependent Variable of Cohabitation among Ever-married Women in the 2015–2017 National Survey of Family Growth.

Predictor	Coefficient	SE	p Level	Odds Ratio	95% CI	
					Lower	Upper
Oral contraceptions ^a	0.48	.12	<.001	1.61	1.27	2.02
Sterilization ^b	0.55	.12	<.001	1.74	1.38	2.19
Condom ^c	0.98	.17	<.001	2.66	1.93	3.68
Church attendance ^d	-0.76	.11	<.001	0.47	0.38	0.58
Religion ^e	-0.64	.11	<.001	0.53	0.42	0.65
Education ^f	-0.09	.02	<.001	0.92	0.87	0.95
Constant	1.28	.30	<.001	3.61		

^aEver use of hormonal birth control pill.

^bFemale sterilization.

^cEver use of the male condom.

^dFrequency of church attendance.

^eImportance of religion.

^fHighest educational grade obtained.

Discussion

The thesis of this article was that the use of NFP and PA during the fertile time of the menstrual cycle improves marital outcomes. Fruits or outcomes of PA in marriage and the expected strengthening of married life would result in the lower odds of divorce and cohabitation. We also theorized that the practice of NFP and PA would help strengthen married life, by helping to develop self-control and self-mastery, encourage more attention to their spouse, and provide better role models for children.

Our review of the literature to date revealed several consistent themes supporting our hypothesis. Across all studies, large majorities (60 percent to 85 percent of respondents) of both men and women users consistently perceive the practice of PA, and NFP has helped their marriage despite the common acknowledgment that it can be difficult at times. Self-esteem, intimacy, and spiritual well-being tend to be high in NFP users and, in the few studies where comparisons were made, appear higher than among contraceptive users. In noncomparative studies, frequency of sexual intercourse appears comparable to the frequency reported by users of contraception, and satisfaction with frequency of intercourse is high among NFP users. In addition to the practice of NFP and PA, past studies have indicated that frequent church attendance and importance of religion is helpful for married life.

Prior studies (Fehring 2013, 14; 2015, 277) using population-based samples indicate in those who ever-used NFP, divorce was at significantly lower rates compared to those who never-used NFP. These studies also demonstrated that regular church attendance and importance of religion are at least as strongly associated with decreased divorce rates. Conversely, use of contraceptives, sterilization, and abortion are all associated with an increased risk of divorce, an observation worthy of further study to understand the societal cost of widespread use of contraceptives.

We found in the 2015–2017 NSFG data that the highest divorce rate (39 percent) was among women who were sterilized and the lowest among women who reported ever-use of NFP; 10 percent when only non-rhythm users

were included in the analysis, much lower than the average percent for the United States (Bramlett and Mosher 2002, 12–14). This divorce rate among the ever-users of NFP is similar to the 9.6 percent rate that Fehring (2015, 277) found in the 2006–2007 NSFG. The somewhat higher divorce or separation rates (14 percent) in the ever-users of NFP in the current study could be due to the older age among our current study by almost eight years (i.e., a mean age of 28.6 years in the 2006–2010 NSFG data set vs. 36.8 years in the current data set). This 14 percent divorce and separation rate also combined both newer methods of NFP with the older calendar-based rhythm method.

As hypothesized, we found that those ever-married women who ever-used NFP or had frequent Church attendance had lower odds of divorce than those women who never-used NFP as a method of family planning and are not frequent churchgoers. However, we did not find that having religion being important in one's life significantly influenced divorce rates despite trends toward lower odds. We did find higher odds of divorce among those women who ever-used OCs and who were sterilized compared to those who were not but no influence of ever-use of condom. With use of stepwise logistic regression analysis, the ORs were similar to the separate OR analysis, in that ever-use of NFP trended toward having a lower odds of divorce. The confounding variable of poverty level, although significant, essentially showed no influence of odds for divorce (OR = 1.00), and the confounding variable of education level was eliminated from the stepwise model.

Our findings were very similar to the Fehring 2013 study of divorce rates among Catholic women with the 2010 NSFG and the influence of family planning methods and religiosity. Like the 2013 Fehring study, we found that sterilization significantly increased odds of divorce or separation while NFP significantly decreased odds of divorce or separation. Our current study also found use of OCs was associated with higher odds of divorce or separation. The 2013 study also found, like the current study, that frequent church attendance was associated with a lower odds of divorce.

The Fehring (2015, 278) study found that ever-use of OCs, sterilization, and condoms were associated with a greater odds of divorce. Ever-use of NFP, rhythm, frequent church attendance, and higher importance of religion were associated with a lower odds of divorce. In the current study, ever-use of OCs, female sterilization, ever-use of NFP, and frequent church attendance were significantly associated with divorce rates. The association of importance of religion and ever-use of condoms with divorce did not reach significance in the current study, most likely due to the lower number of women (2,545 in the current study compared to 5,530 in the 2015 study) which could have negatively affected statistical power. It could also be that new popular digital “fertility awareness” based systems and fertility monitoring applications dilute these factors because many promote concomitant condom use and lack the value-based formation that often accompanies traditional NFP methods.

Exploring the association of cohabitation with divorce in the current study was a secondary purpose of the study, and the results appear to agree with previous studies (see Stanton [2008] for a brief review). In our analysis of the NSFG data, cohabitation was associated with 2.4 times the odds of divorce; with a divorce rate of 32.5 percent among the 569 women who ever cohabited in this sample. The 2006–2010 NSFG also showed that 32.2 percent of premarriage cohabitation couples will remain intact, 40.3 percent will transition to marriage, and 27.4 percent will break up.

Our results further show the odds of cohabitation is significantly associated with use of female sterilization, ever-use of OCs, and ever-use of condoms with 1.7 times to almost three times the odds of cohabitation compared to women who never-used those means of family planning. The ever-use of NFP was associated with a nonsignificant lower odds of cohabitation. The reason for a lack of statistical significance could be due to the small number of ever-users of NFP and the NFP variable also include use of rhythm.

Religiosity (i.e., both frequent church attendance and importance of religion) was a significant protective factor in that it provided 64 percent to 68 percent lower odds of cohabitation compared to women who do not attend church frequently or feel that religion is very important. With the logistic regression equation, the ORs are similar in that the contraceptive methods were associated with a higher odds of cohabitation, religiosity was associated with a lower odds of cohabitation, and ever-use of NFP tended to be associated with a lower odds of cohabitation but did not reach statistical significance. Note that the confounding variable of poverty level did not make the final regression model and education level had a very modest association with lowering the odds of cohabitation.

Whether the use of NFP is helpful to marriage because of marital chastity and PA is another question. One reason for this could be selection bias, for example, if couples who ever-used NFP have inherently better relationship skills that predispose marriage to a lower odds of divorce. However, even if NFP couples have better inherent relationship skills, the consistently large proportion of NFP users who perceive their marriage has benefited from the practice of PA (chastity) indicates they are further reducing their risk of divorce by using PA. When we combined the family planning methods that require PA (NFP and rhythm), we found the use of PA lowered the odds of divorce by 31 to 41 percent.

Certainly, factors unrelated to family planning choices, notably income and educational level of the woman participant, might be influencing factors in both cohabitation and divorce. In our study, both of these factors had a much lower level of influence than that of contraceptive use and religious practices.

Our study was not without limitations. First, in the literature review, most studies had one or more limitations, including use of convenience samples, small size, low response rate, and use of nonvalidated measurement devices that precluded generalized conclusions. A limitation of our new analysis is that the number of NFP users in this study was low. Although we used every woman who ever-used NFP in the data set, this was still underpowered. Further research could combine those women who are currently using NFP methods in previous NSFG data sets and thereby obtaining greater statistical power. It should also be noted that this study investigated “ever” use of NFP, not consistent use. It might be that consistent use of NFP could have an even greater effect than ever-use.

Another limitation to understanding the association of divorce and cohabitation with PA is the extremely small number of women who currently use NFP. This could prove challenging even with combining data sets, since only 0.1 percent of the women in the data sets are current-users of NFP. Finally, there are NSFG data sets that involve reproductive age males, but questions about family planning options are not asked. Another future research direction could investigate males and their use of NFP and PA in their married lives. Even better, studies could involve both the husband and wife in the use of NFP, similar to the earlier studies by Fehring and Lawrence (1994, 18–19). Finally, the variable of importance of religion has decreased over the decades, and there are now more “nones” (i.e., no religion indicated) than Catholics. Determining whether those couples with no religion have greater odds of divorce would be of interest.

Another difficulty in researching NFP and divorce is that the ever or current use of NFP response is a point in time that provides limited information. Longitudinal studies following relationship dynamics, couples’ perceptions of their choice of family planning methods, ideally large enough to see the associations between those choices, and divorce and cohabitation would no doubt provide useful insight for both individuals and society as a whole. Toward that, it would be interesting to see trends over a number of recent data sets from NSFG.

Finally, in contrast to contraception where fertility is simply blocked, suppressed, or when fertility is rendered inoperative via sterilization, NFP, and the perspective one has toward PA can be integrated into a couple’s life to

varying degrees, and this may shift day to day and year by year. Some women use NFP as just another type of contraception, others use it because it has no side effects, while others use NFP for deeper reasons; for marital benefits and/or religious and spiritual benefits (Fehring 1995, 221–23). The sacrifice required by the husband using PA also may influence the marital dynamics increasing the respect and devotion of the spouses for each other, but this requires further study. This deeper level of integration of NFP may be associated with lower divorce rates.

In conclusion, there is evidence that the use of NFP and PA is helpful for marriage and as expressed by Dr. Ogino (1934, 98–80) is “useful for the maintenance of the peace of the married couple.” We found that those ever-married women who ever-used NFP or frequented church had lower odds of divorce than those women who never-used NFP as a method of family planning and were not frequent churchgoers. We also found evidence of higher odds of divorce, separation, and cohabitation in couples using sterilization and other forms of contraception.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

- Barroilhet, Sergio, Camila, Señoret, Mallea, Ximena, Fritsch, Rosemarie, Vohringer, Paul, Arraztoa, Jose´-Antonio. 2018. “Marital Functioning in Couples Practicing Periodic Abstinence for Family Planning.” *The Linacre Quarterly* 85, no. 2: 155–16. doi: 10.1177/0024363918764950.
- Borkman, Thomasina, Shivanandan, Mary. 1984. “The Impact of Natural Family Planning on Selected Aspects of the Couples’ Relationship.” *International Review of Natural Family Planning* 8:58–66.
- Boys, Grace A. 1988. “Factors Affecting Client Satisfaction in the Instruction and Usage of Natural Methods.” *International Journal of Fertility Supplement* 33:59–64.
- Bramlett, Matthew D., Mosher, William D.. 2002. “Cohabitation, Marriage, Divorce, and Remarriage in the United States.” *National Center for Health Statistics: Vital and Health Statistics* 23, no. 22: 1–93.
- CCC (Catechism of the Catholic Church). 1994. Vatican City: Liberia Editrice Vaticana.
- Fehring, Richard Jerome . 1995. “Toward a Model of Fertility Integration.” In *Life and Learning IV Proceedings of the 4th Annual University Faculty for Life Conference*, edited by Koterski, Joseph , 216–29. New York: Fordham University Press.
- Fehring, Richard Jerome . 2013. “Under the Microscope: The Influence of Ever Use of Natural Family Planning and Contraceptive Methods on Divorce Rates as Found in the 2006-2010 National Survey of Family Growth.” *Current Medical Research* 24, nos. 3–4:12–16.
- Fehring, Richard Jerome . 2015. “The Influence of Contraception, Abortion and Natural Family Planning on Divorce Rates as Found in the 2006-2010 National Survey of Family Growth.” *The Linacre Quarterly* 82, no. 3: 273–82.
- Fehring, Richard Jerome . 2016. “In Depth-under the Microscope: Marital Dynamics of Practicing NFP.” *The Linacre Quarterly* 83, no. 1: 105–14.
- Fehring, Richard Jerome . 2019. “Influence of Current Contraceptive Use on the Abortion and Sexually Transmitted Disease Rates among Adolescents.” In *Life and Learning XXVII, Proceedings of the Twenty Seventh (2017) Conference of University Faculty for Life*, edited by Koterski, Joseph , 205–21. Bronx, New York City: Fordham University.
- Fehring, Richard Jerome, Bouchard, Thomas, Meyers, Maria. 2017. “Influence of Contraception Use on the Reproductive Health of Adolescents and Young Adults.” *The Linacre Quarterly* 85, no. 2:167–77.

- Fehring, Richard Jerome, Bouchard, Thomas, Meyers, Maria. 2018. "Influence of Current Contraceptive Use on the Abortion and Sexually Transmitted Disease Rates among Adolescents." In *Life and Learning XXVII. Proceedings of the Twenty Seventh (2017) Conference of University Faculty for Life*, edited by Koterski, Joseph, 211–31. Bronx, New York City: Fordham University.
- Fehring, Richard Jerome, Lawrence, Donna M.. 1994. "Spiritual Well-being, Self-esteem, and Intimacy among Couples Using Natural Family Planning." *The Linacre Quarterly* 61:18–29.
- Fehring, Richard Jerome, Lawrence, Donna M., Sauvage, Catherine M.. 1989. "Self-esteem Spiritual Well-being, and Intimacy: A Comparison among Couples Using NFP and Oral Contraceptives." *International Review of Natural Family Planning* 13:227–36.
- Fehring, Richard Jerome, Ohlendorf, Jennifer. 2008. "The Influence of Religiosity on Contraceptive Use and Abortion in the United States." *Life and Learning* 17:398–416.
- Fehring, Richard Jerome, Schneider, Mary. 2014. "Comparison of Abstinence and Coital Frequency between Two Natural Methods of Family Planning." *Journal of Midwifery and Women's Health* 59:528–32.
- Finley, M. 1992. "The Dark Side of Natural Family Planning." *America* 164:206–7.
- Fragstein, Martin von, Flynn, Anna, Royston, Patrick. 1988. "Analysis of a Representative Sample of Natural Family Planning Users in England and Wales, 1984–1985." *International Journal of Fertility* 33:70–77.
- Haglund, K. A., Edwards, L., Fehring, R., Pruzynski, J.. 2011. "Religiosity and Sexual Risk Behaviors among Latina Adolescents: Trends from 1995–2008." *Journal of Women's Health* 20:871–77.
- Haglund, K. A., Fehring, R. J.. 2010. "The Association of Religiosity, Sexual Education, and Parental Factors with Risky Sexual Behaviors among Adolescents and Young Adults." *Journal of Religion and Health* 49:460–72.
- Hilgers, Thomas W. 1991. *The Medical Applications of Natural Family Planning*. Omaha, NE: Creighton University Natural Family Planning Education and Research Center.
- John Paul, II, Pope. 1984. *Reflections on Humanae Vitae*. Boston, MA: Daughters of Saint Paul, 61–80.
- John Paul II, Pope . 1995. *Evangelium Vitae (The Gospel of Life)*. Saint Paul, MN: The Leaflet Missal Company, #13.
- Klann, Notker, Halweg, Kurt, Hank, Gerti. 1988. "Psychological Aspects of NFP Practice." *International Journal of Fertility* 33:65–69.
- Marshall, John, Rowe, Beverly. 1970. "Psychological Aspects of the Basal Body Temperature Method of Regulating Births." *Fertility and Sterility* 21:14–19.
- McCusker, M. Peter . 1977. "Natural Family Planning and the Marital Relationship: The Catholic University of America Study." *International Review of Natural Family Planning* 1:331–40.
- Muise, Amy, Schimmack, Ulrich, Impett, Emily A.. 2016. "Sexual Frequency Predicts Greater Well-being, But More Is Not Always Better." *Social Psychological and Personality Science* 7, no. 4: 295–302.
- Odds, B. J. 1999. "Women's Satisfaction with Birth Control: A Population Survey of Physical and Psychological Effects of Oral Contraceptives, Intrauterine Devices, Condoms, Natural Family Planning, and Sterilization among 1466 Women." *Contraception* 59:277–86.
- Ogino, Kyusaku . 1934. *Conception Period of Women*. Harrisburg, PA: Medical Arts Publishing, 79–80.
- Paul VI, Pope . 1968. *Humanae vitae (Of Human Life)*. Boston: Pauline Books, #21.
- Rhomberg, Walter, Rhomberg, Michaela, Weissenbach, Hubert. 2013. "Natural Family Planning as a Family Binding Tool: A Survey Report." *Catholic Social Science Review* 18:63–70.
- Rodriguez, Dana, Fehring, Richard. 2012. "Family Planning, Natural Family Planning, and Abortion Use Among U.S. Hispanic Women." *The Linacre Quarterly* 79, no. 2: 192–07. doi: 10.1179/002436312803571429.
- Sinai, Irit, Arevalo, Marcos. 2005. "It's All in the Timing: Coital Frequency and Fertility Awareness-based Methods of Family Planning." *Journal of Biosocial Science* 38:1–15. doi: 10.1017/S0021932005027227.
- Smith, T. W. 2006. "American Sexual Behavior: Trends, Socio-demographic Differences, and Risk Behavior." *National Opinion Research Center University of Chicago GSS Topical Report No. 25*. <http://gss.norc.org/Documents/reports/topical-reports/sextrend042-13.pdf>.

- Stanton, G. T . 2008. "What's the Deal with Cohabitation." <https://pdfs.semanticscholar.org/b446/9ec4158f91be6a56b3b1cc79665a7256744b.pdf>
- Stover, J., Bertrand, J., Smith, S., Rutenberg, N., Meyer-Ramirez, K.. 2001. Empirically Based Conversion Factors for Calculating Couple-years of Protection. Chapel Hill, NC: Carolina Population Center.
- Suenens, Leon (Cardinal) Joseph . 1962. Love and Control. Westminster, MD: The Newman Press.
- Tortorici, Joseph . 1979. "Conception Regulation, Self-esteem, and Marital Satisfaction among Catholic Couples: Michigan State University Study." *International Review of Natural Family Planning* 3:191–205.
- Udry, J., Morris, N.. 1970. "Effect of Contraceptive Pills on the Distribution of Sexual Activity in the Menstrual Cycle." *Nature* 227:502–3. doi: 10.1038/227502a0.
- Unsel, M., Rötzer, Elizabeth, Weigl, Roman, Masel, Eva K., Manhart, Michael D.. 2017. "Use of Natural Family Planning (NFP) and Its Effect on Couple Relationships and Sexual Satisfaction: A Multi-country Survey of NFP Users from US and Europe." *Front Public Health* 13:42. doi: 10.3389/fpubh.2017.00042.
- VandeVusse, Leona, Hanson, Lisa, Fehring, Richard Jerome. 2003. "Couples' Views of the Effects of Natural Family Planning on Marital Dynamics." *Journal of Nursing Scholarship* 35:171–76.
- WHO (World Health Organization) . 1987. "A Prospective Multicenter Trial of the Ovulation Method of Natural Family Planning. V. Psychosexual Aspects." *Fertility and Sterility* 47:765–72.
- Wilson, Mercedes Arzu . 2005. "The Practice of Natural Family Planning versus the Use of Artificial Birth Control: Family, Moral and Sexual Issues." *Catholic Social Science Review* 7:185–211.