

Multidimensional analysis of aspects of using fertility awareness-based methods

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AUTHORS' CONTRIBUTION: (A) Study Design · (B) Data Collection · (C) Statistical Analysis · (D) Data Interpretation · (E) Manuscript Preparation · (F) Literature Search · (G) Funds Collection

SUMMARY

Introduction. Fertility awareness-based methods (FABM) are forms of family planning based on observing physiological indicators of the woman's fertile and infertile period. When conception is not planned, the users limit intercourse to only the infertile days of the menstrual cycle, either by exercising periodic sexual abstinence or by using additional contraceptive methods.

Aim. Analysis of the types of fertility awareness-based methods by women, the method and length of learning the rules of the selected method, getting to know the opinions of women about previously used methods of observation the cycle or conception control methods and the reasons for giving up on them, as well as the simultaneous use of different methods and assessment of the level of satisfaction with the application selected method.

Materials and methods. The survey included a group of 403 women of childbearing age who declare the use of fertility recognition methods. 372th questionnaires were included in the final analysis. Statistical analysis of the data was performed in the R language (version 3.6.2), using the RStudio environment. The p value <0.005 was adopted as significant. An ordinal scale ranging from 1 to 5 was used in the box plots. The median is represented by the bold line.

Result. 37.1% of women used the symptothermal method according to Rötzer, 19.9% symptothermal method English, 12.9% Creighton Model Fertility Care System, 10.8% Lady-Comp, Baby-Comp and other computers. 21% of women previously used other methods of birth control, and 8% use an additional, different method at the same time as their fertility recognition method.

Conclusions. The symptothermal method is the most commonly used FABM. The highest level of satisfaction and confidence is declared by the respondents using the Creighton Model. Women using fertility regulation methods and using an additional method of contraception at same time are characterized by a lower level of satisfaction with the use of FRM. People most interested in FABM have higher education, live in formalized, permanent relationships, and are Roman Catholic.

Key words: fertility awareness-based methods; natural family planning; fertility; contraception; symptothermal method; satisfaction

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INTRODUCTION

Fertility awareness-based methods (FABM) are forms of family planning based on observing physiological indicators of the woman's fertile and infertile period. Interpreting these symptoms allows you to plan or avoid pregnancy by adjusting your sexual behavior. When conception is not planned (contraceptive goal), users limit intercourse only to the infertile days of the menstrual cycle, with periodic sexual abstinence. In a situation where users do not choose to abstain from sex, additional contraception methods are applied during the fertile time.

Self-observation of characteristic women's symptoms (biomarkers), such as basal body temperature, vaginal and cervical discharge changes, and the location, consistency, and degree of cervical dilation, is a tool used to identify fertility and infertility periods in the monthly cycle. Observations do not require any specialized medical equipment. They are performed during the day while performing daily activities [1,2].

Methods of recognizing fertility are used by couples aware of health burdens resulting from long-term use of hormonal contraception, who want to maintain the harmonious functioning of the natural fertility cycle and consciously plan parenthood, or for religious reasons. Moreover, the analysis of biomarkers is used to diagnose and treat ailments and diseases of the genitourinary and endocrine systems [3,4].

Natural family planning is the commonly used name of fertility awareness-based methods. It assumes the implementation of changing people's sexual behavior, including the temporary subordination of the sexual drive to higher needs (e.g., love, friendship, acceptance) and abandoning the use of barriers-contraceptive methods during the potentially fertile days. Natural family planning is a form of life for a woman and a man living in a stable and monogamous relationship and being aware of their fertility and the resulting possibility of bringing a new life. This attitude also indirectly contributes to limiting the spread of sexually transmitted infections [5].

Methods of diagnosing fertility are safe for the reproductive health of women, do not require any additional activities before sexual intercourse, are easy to learn - their application does not depend on the level of education and does not require the supervision of health care personnel. However, their susceptibility to user error and the requirement of careful observation demand a high level of motivation and emotional maturity of both partners. The interaction of a couple (expressed by, i.a., sincere communication, acceptance of mutual sexual needs, and a carefully carried out education process) is necessary for the effective implementation of these methods and their high contraceptive effectiveness [3].

The sympto-thermal method (STM) is probably the most popular method of cycle observation in Poland. It relies on analyzing changes in the cervical mucus and basal body temperature, with the possibility of additional obser-

vation of the cervix (its hardness, position, and degree of the external opening) [3]. Other significant and popular methods include the Creighton Model FertilityCare System and cycle computers. The Creighton Model is a method of observing biological markers such as bleeding, vaginal discharge, cervical mucus, and dryness signs visible at the vaginal opening. The technique is prospective, so unlike all the others, it does not consider the course of previous menstrual cycles [1]. Cycle computers are medical diagnostic devices programmed to determine the menstrual cycle phases solely from the measurement of basal body temperature [6].

Natural cycle observation methods respect the biological rhythm of female fertility but do not receive proper support from healthcare professionals. This is mainly due to insufficient access to reliable and updated knowledge of FABM, marginal presence in recognized medical parenthood-planning journals, and lack of

Tab.1. Demographic data of the research group of women (n = 372)*

	N	(%)
Age		
<20 years	3	(0,8)
21 - 25 years	67	(18,0)
26 - 30 years	129	(34,7)
31 - 35 years	78	(21,0)
36 - 40 years	57	(15,3)
41 - 45 years	20	(5,4)
46 - 50 years	12	(3,2)
51 - 55 years	6	(1,6)
Marital status		
maid	18	(4,9)
married	351	(94,6)
divorced	2	(0,5)
Education		
junior high school	1	(0,3)
essential professional	1	(0,3)
medium	40	(10,8)
higher	330	(88,7)
Residence		
village	60	(16,1)
city up to 50,000 residents	58	(15,6)
city 50,000 - 100,000 residents	64	(17,2)
city 100,000 - 250,000 residents	57	(15,3)
city over 250,000 residents	133	(35,8)
Economic situation		
insufficient	14	(3,8)
sufficient	181	(48,7)
satisfactory	177	(47,6)
Confession		
Catholic	358	(96,2)
Protestant	1	(0,3)
Orthodox	1	(0,3)
not applicable	10	(2,7)
other	2	(0,5)
* Complete demographic data was not obtained from all respondents		

real cooperation between gynecologists and certified FABM instructors. Meanwhile, it turns out that natural methods, often due to their ecological perspective, are successfully used by couples worldwide [2,7].

AIM

Analysis of the types of fertility awareness-based methods by women, the method and length of learning the rules of the selected method, getting to know the opinions of women about previously used methods of observation the cycle or conception control methods and the reasons for giving up on them, as well as the simultaneous use of different methods and assessment of the level of satisfaction with the application selected method.

MATERIAL AND METHODS

The study was conducted via a self-developed questionnaire posted on the Internet. Four hundred three women of childbearing age living in Poland took part in it. We informed the respondents about the purpose of the study and the anonymity in providing answers. The inclusion criteria were the consent to participate in the research and the declaration of using one of the FABMs. The exclusion criteria were the lack of consent to participate in the research, incorrectly completed questionnaire, and the use of a method that is not considered a FABM. According to the given criteria, we accepted 372 questionnaires and excluded 31.

The questions covered demographic information and the type of FABM used. The survey also included questions about the duration of learning a given method, previously used techniques, and withdrawal reasons. In the next section, the questions concerned the simultaneous use of different methods plus a subjective assessment of the level of satisfaction and confidence in using the methods.

The statistical analysis was carried in the R (ver. 3.6.2) using RStudio with a non-parametric Mann-Whitney test for two groups. In the case of multiple comparisons, we used the Kruskal-Wallis test. The level of alpha significance was set to 0.05. An ordinal scale ranging from 1 to 5 was used in the box plots with a median represented by a bold line.

RESULTS

Table 1 shows the demographic data of the test group, while Table 2 gathers the types of FABMs involved.

Among the surveyed women, the sympto-thermal method was the most frequently used (230 respondents, 62%) with the Creighton Model FertilityCare System and cycle computers being next.

Most of the respondents learned the principles of the method on their own (37%). The others most often attended special courses or workshops (26%), premarital courses (13%), or family life clinics (8%). Only six women taught the rules of natural methods from a health professional (midwife, doctor, or nurse).

Tab.2. The currently used FABM among the surveyed women (n = 372)

Currently used FABM	n	(%)
Sympto-thermal method by Josef Rötzer [8]	138	(37,1)
Doble-check sympto-thermal method (English) [5]	4	(19,9)
Creighton Model FertilityCare System [1]	48	(12,9)
Cycle computers: Lady-Comp, Baby-Comp, Pearly, Ovacue, Persona, Bioself etc. [6, 9]	40	(10,8)
Calendar method [3]	19	(5,1)
Billings Ovulation Method [3]	19	(5,1)
Sympto-thermal method by John and Sheila Kippley [3]	10	(2,7)
Another sympto-thermal method ((Dr. Kramarek; German; Marriage League) [3]	8	(2,2)
LAM method (lactation absence of menstruation) [5]	6	(1,6)
Other methods (modifications of the above, Boston Cross Check with Model Marquette, mobile applications)	6	(1,6)
None of the above	3	(0,8)
Strict thermal method [5]	1	(0,3)

The learning and implementation period lasted, in most cases, 1-3 months (47%) or 3-6 months (23%).

Seventy-eight women (21%) declared that before the current FABM, they used unnatural means of conception control, such as condoms, hormonal methods (single-component and combined contraceptive pills, transdermal patches, intramuscular injections, vaginal ring), and intermittent intercourse. The reasons for withdrawing from these techniques are given in Table 3.

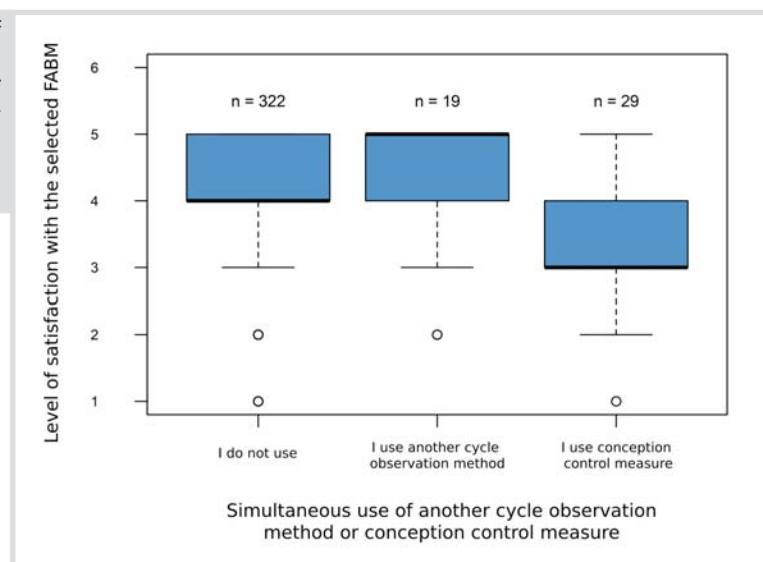
The respondents were asked whether they use another cycle observation (additional biomarker analysis) or a conception control measure (i.e., condom, intermittent intercourse, or hormonal methods) simultaneously with the preferred FABM on fertile and/or infertile days. Twenty-nine women (8%) reported that they additionally use a condom or intermittent intercourse.

The study showed that the lowest level of satisfaction with using the selected FABM is reported by those respondents who additionally use conception control (Fig. 1). The highest

Tab. 3. Motives for withdrawing from the previously used unnatural method (n = 78)

Reason for withdrawing from the previously used unnatural method	n	(%)
religious reasons	48	(61,5)
the unnatural nature of the method	39	(50,0)
feeling negative psychological effects	26	(33,3)
harmful to health	24	(30,8)
moral reasons	23	(29,5)
intention to conceive a child	18	(23,1)
loss or limitation of intercourse in a relationship (e.g., due to decreased sex drive)	16	(20,5)
lack of confidence in the effectiveness of the method	14	(17,9)
physical discomfort with the use of the method (e.g. irritation or allergy caused by the agent used)	11	(14,1)
feeling of being abused by a spouse/partner	7	(9,0)
health reasons	6	(7,7)
difficulties and problems with observing fertility symptoms	5	(6,4)
parting with a spouse/partner	3	(3,8)
Ineffectiveness of the method	3	(3,8)
unintentional conception	3	(3,8)

Fig.1. Assessment of the level of satisfaction with the selected FABM vs. the simultaneous use of another cycle observation method or conception control measure (n = 370)*; * no answers were obtained from all respondents



level of satisfaction with using the method occurs among those respondents who involve additional fertility indicators.

The subjective assessment of women’s confidence in using FABMs is shown in Fig. 2. 75% of the respondents are fairly or absolutely sure when using the selected FABM (Fig. 2). The highest level of confidence is presented by women using the Creighton Model and other methods, which are mostly individual modifications of symptomatic and sympto-thermal methods, in some cases combined with a mobile application. One of the respondents uses the American Boston Cross Check combined with the Marquette Model, not suggested in the questionnaire. The users of the LAM method present the lowest level of confidence. The result of the analysis is presented in Fig. 3.

It was stated, that the level of confidence depends on the way of learning the chosen method (Fig. 4). The highest level of confidence is presented by the respondents who have participated in a special course or workshop and those who have acquired the necessary knowledge in a different way, i.e., in most cases combining many forms of learning and participating in several courses or workshops (includ-

ing those organized online) or using the experience of family members. Several respondents declared that they had instructor skills in various FABMs.

Most (73%) of respondents are satisfied or very satisfied with the applied FABM (Fig. 5).

The respondents expressed the highest level of satisfaction with the use of the Creighton Model and other methods of observation (the previously mentioned individual modifications of sympto- and sympto-thermal methods, in some cases combined with a mobile application, the Boston Cross Check with the Marquette Model). The users of the LAM method reported the lowest level of satisfaction (Fig. 6).

DISCUSSION

Only women who currently use various FABMs took part in the study. The people most interested in this kind of family planning have higher education, live in formal, stable relationships, assess their economic situation as satisfactory or sufficient, and are Roman Catholics, which is confirmed by other studies [10-12].

Selecting methods and means for family planning is currently a popular topic of many

Fig.2. Assessment of the level of confidence with the application of selected FABM (n = 369)*; * no answers were obtained from all respondents

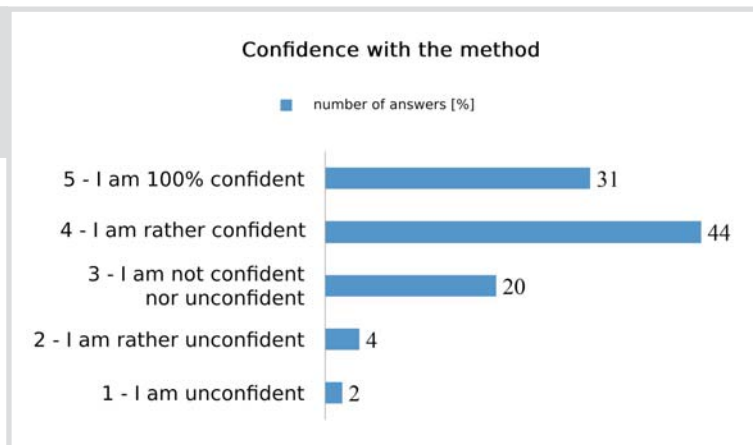
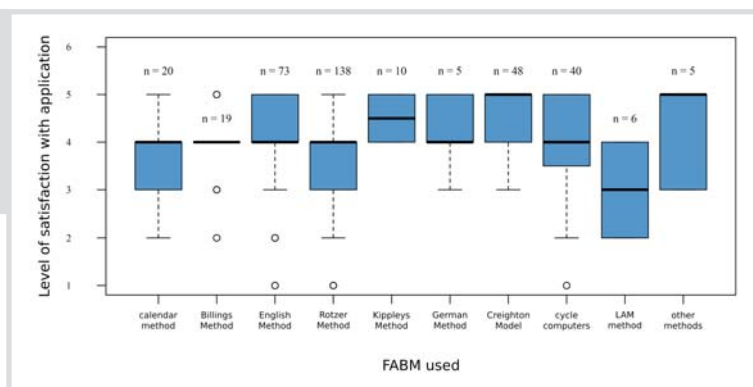


Fig.3. Assessment of the level of confidence vs. the selected FABM (n = 364)*; * no answers were obtained from all respondents. An ordinal scale ranging from 1 to 5 was used. The bold line represents the median



research studies. Most of them document the use of natural cycle observation methods by groups of women of various sizes. Warzecha et al. [13] involved over 20,000 Polish women. 8.9% of them considered FABMs one of the most effective or sufficiently effective methods of contraception. 17.4% of the respondents declared that they would recommend natural methods to their friends and acquaintances. Bączek et al. [14] reported that FABMs were declared by 28% of respondents (a group of 100 women). The declaration of using FABM

was expressed by 16% of the respondents (a group of 453 students) surveyed by Jabłonska et al. [15]. In contrast, in the educational research program CHOICE (Contraceptive Health Research of Informed Choice Experience), which was attended by 1,836 women, 3.4% use or have used FABMs in the past [16]. Deluga and Aftyka [17] reported using these methods by 22.8% of 158 female students from Lublin universities. These studies show that a certain group of women still express a positive attitude to life in line with periodic fertility

Fig.4. Assessment of the level of confidence vs. the way of learning the selected FABM (n = 369)*; * no answers were obtained from all respondents

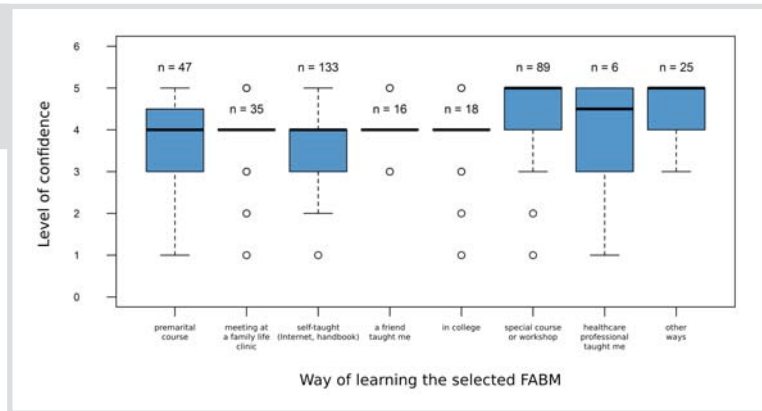
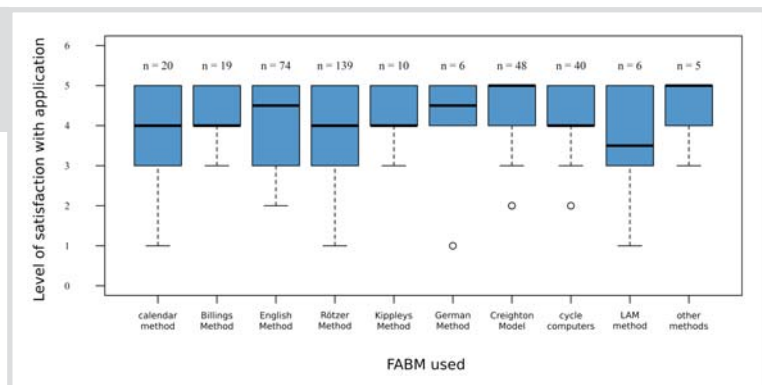


Fig.5. Assessment of the level of satisfaction with the selected FABM (n = 372)



Fig.6. Assessment of the level of satisfaction vs. the FABM used (n = 367)*; * no answers were obtained from all respondents



rhythm, despite the increasing popularity, availability, and high effectiveness of hormonal contraceptive methods. Tokarz et al. [18] emphasize that women using natural observation methods feature an extraordinary level of knowledge of human sexuality. The possibility of planning their offspring or determining the exact day of conception is satisfactory for them. In the survey, 73% of the respondents are satisfied or very satisfied with the FABM used. The study did not include the observation of subjective feelings and opinions of the respondents' husbands and partners, which would enrich the discussion.

In our study, 62% of the respondents declared the use of sympto-thermal methods by various authors. According to the latest reports, the most effective fertility diagnosis methods include the sympto-thermal method and the Creighton Model. With the proper application of the recommendations, their effectiveness in preventing pregnancy is comparable to hormonal contraception [19,20]. In this study, 75% of respondents are fairly or absolutely confident when using the selected FABM.

The highest level of satisfaction and confidence in the FABM application was declared by the respondents using the Creighton Model. It may result from the highly objectified way of conducting observations and the standardized teaching methodology, performed only in individual meetings by a certified instructor. During each session, the instructor documents its course and assesses the participants' level of understanding and knowledge. That clearly distinguishes this method from the others [1]. Thus, a qualified education in the form of an individualized course or workshops, enabling a couple to obtain a sufficient level of knowledge, is a highly important factor influencing the effectiveness of natural observation methods and a sense of confidence among women and their partners.

Findings of the feelings of people who use all birth control methods are rare in the medical literature. Both current users and those who have abandoned a given family planning method should be involved in the study to produce a credible, objective picture of these experiences. Among the surveyed women, 78 (21%) of them had previously used conception control measures, which they gave up for various reasons (Table 3). Regardless of whether the decision to choose a FABM was more influenced by religion, morality, or a desire to use a nat-

ural and safe method for health, it is a well-accepted form of family planning [2,21-24].

A guide published by the World Health Organization in 1988 for counseling on the promotion of natural observation methods, as well as other contemporary scientific publications, emphasize the high importance of the level of motivation, acceptance, and self-discipline of a couple using FABM to postpone or avoid conception, to achieve high contraceptive efficacy. When meeting such requirements is, for various reasons, difficult for a couple, it is advised to use barrier methods of conception control during fertility periods [21,25]. Such action increases the useful contraceptive efficacy of the FABM, but it is comparable to the effectiveness in periodic sexual abstinence in the fertile period. This phenomenon was observed by Frank-Hermann et al. [26] in a prospective long-term study in Germany involving over 750 women. An additional barrier form of contraception is an option for users preferring an ecological lifestyle in line with the rhythm of a woman's periodic fertility and for whom such action would not harm their morality [21,26].

In our study, 8% of the respondents using natural observation methods confirmed the use of an additional method of contraception (i.e., condoms and intermittent intercourse) during the fertile or infertile periods. Note the statistical analysis results indicating that these women rated the level of satisfaction with the FABM use the lowest.

Many specialists suspect that women and their partners will not be interested in this type of family planning, especially in terms of periodic sexual abstinence [2,7]. It is not difficult to find similar opinions among gynecologists and midwives in Poland [18]. In practice, such an attitude often leads to a complete resignation from proposing FABMs as one of birth control forms and, as a result, limiting access to them [7]. In the study by Bączek et al. [27], only 3% of respondents were trained in natural observation methods by medical personnel, and 8% obtained information from a gynecologist or a family doctor. Another sample confirmed a high acceptance for natural methods among Polish women who declare a good knowledge of various forms of conception control [28]. However, only 40% know exactly what they are. It is both a disturbing and an interesting issue that should be raised in future studies.

The perinatal care program's implementation is possible, among others, thanks to pro-

professionally conducted education in the field of self-observation and interpretation of fertility symptoms. They constitute foundations of reproductive health and social responsibility, conscious and satisfactory sexual life. Knowledge of the available and most effective FABMs and the basic principles of their use would help develop practical cooperation between those who carry out health education and qualified FABM instructors in Poland and all over the world [14,18,22,23,29,30].

CONCLUSIONS

The sympto-thermal method is the most commonly used FABM. The highest level of satisfaction and confidence is declared by the respondents using the Creighton Model. Women using fertility regulation methods and using an additional method of contraception at same time are characterized by a lower level of satisfaction with the use of FRM. Women most interested in FABM have higher education, live in formalized, permanent relationships, and are Roman Catholic.

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