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PN ABJ-524  
72431

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number	2. Contract/Grant Number	3. Publication Date
	DPE-3041-A-00-0043	1990

4. Document Title/Translated Title

Efficacy of Three Variations of Periodic Abstinence for Family Planning in Indonesia

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6. Contributing Organization(s)

FAMILY HEALTH INTERNATIONAL

7. Pagination	8. Report Number	9. Sponsoring A.I.D. Office
8 pages	90-55	POPULATION

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)

1. use effectiveness	4. contraception failure
2. comparative study	5.
3. continuation	6.

12. Supplementary Notes

13. Submitting Official	14. Telephone Number	15. Today's Date
Debbie Wade	919/544-7040, ext 247	April 3, 1991

.....DO NOT write below this line.....

16. DOCID	17. Document Disposition
	DOCRD [] INV [] DUPLICATE []

# Efficacy of Three Variations of Periodic Abstinence for Family Planning in Indonesia

PNABI 524<sup>90-55</sup>

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*A prospective study to determine the efficacy of three alternative guidelines for the practice of periodic abstinence (PA) for family planning was conducted in Indonesia. The three methods studied were the Billings ovulation method, the Dorairaj modified mucus method, and a local version of the mucus method. For each method, the study encompassed a three-month learning phase and an additional 12-month effectiveness phase. Data from a total of 850 acceptors showed that, despite some variations in the sociodemographic characteristics of the acceptors, the Billings ovulation method had the lowest (10.4 per 100 women) and the local mucus method had the highest (26.5 per 100 women) overall life-table discontinuation rates in the effectiveness phase. One-year life-table unplanned pregnancy rates ranged from 2.5 per 100 women for the Billings method to a high of 11.5 per 100 women for the local method acceptors. Unplanned pregnancy was the main reason for termination. (STUDIES IN FAMILY PLANNING 1990, 21, 6: 327-334)*

Periodic abstinence (PA) for family planning (sometimes referred to as "natural" family planning) refers to the "methods of planning or preventing pregnancy based on observation of naturally occurring signs and symptoms of the fertile and infertile phases of the menstrual cycle" (WHO, 1988: 1). It is implicit in this definition that when a couple use PA to avoid a pregnancy, they abstain from sexual intercourse during the potentially fertile phase of the woman's menstrual cycle.

Over the last three decades, three main methodologies for PA have been developed: the cervical mucus method, the basal-body temperature method, and the sympto-thermal method. The cervical mucus method requires observing changes in the cervical mucus as the

primary sign of the fertile and infertile phases of the menstrual cycle. This method was developed by John and Evelyn Billings (Billings, 1964; Billings et al., 1980); hence its authentic version is commonly referred to as the Billings ovulation (BO) method. The basal body temperature method is based on the daily recording of the basal (that is, resting) body temperature to identify a shift to a higher temperature level that follows ovulation and indicates the onset of the infertile period (Vollman, 1977). The sympto-thermal method involves the use of a combination of fertility indicators, including cervical mucus and temperature, and sometimes the calendar rhythm approach (Parenteau-Carreau, 1981).

The Billings ovulation method is thought to be the most commonly practiced method among those who prefer to use periodic abstinence methods in Indonesia. In addition, two variations of the method have been practiced in selected communities in Indonesia. One is the modified mucus (MM) method proposed by Dorairaj (1980). This method has simplified the guidelines and rules of the Billings method. Another cervical mucus method practiced in Indonesia is a simplified version of the modified mucus method, referred to as the local (LO) method. For use of the LO method, an acceptor is simply taught how to identify the fertile and infertile cervical mucus and is instructed to abstain during the fertile mucus days, without the daily charting of mucus patterns.

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While the original Billings method is rigorous in its application of rules and guidelines, the two variations are less exacting and hence easier to comply with. The LO method is a potentially attractive PA alternative, especially to couples who stop using the BO method because of its demanding requirements in terms of both abstinence and charting.

This report presents findings from a prospective, multicenter study carried out in Indonesia that was designed to evaluate the efficacy of these three alternative guidelines for the practice of the cervical mucus method. More specifically, the report examines the study subjects' sociodemographic characteristics, evaluates the efficacy of the PA methods practiced, and analyzes reason-specific discontinuation rates. The findings from this study could have important programmatic implications for settings where the program managers and policy-makers are considering integrating a simpler PA method into an existing family planning program. The overall goal of the study was to provide the National Family Planning Coordination Board (or BKKBN) with the necessary data for developing a policy on provision of PA in the national family planning program

## Methodology

The study encompassed two phases, *learning* and *effectiveness*. The learning phase included three menstrual cycles (approximately three months) while the effectiveness phase comprised 13 menstrual cycles (approximately 12 months). Three cycles was chosen as a cut-off point for the learning phase since a major World Health Organization (WHO) multicenter study (WHO, 1981a) showed that the majority of women entering the learning (teaching) phase were able to learn the method over a period of three cycles, and those who required more than three cycles were less successful in their practice of the Billings method.

For this study, an entrant into the learning phase for each of the three methods was defined as a woman who, following initial instruction, completed the first cycle of charting while observing sexual abstinence as instructed and returned to the teacher for consultations. The following selection criteria were employed to enroll the volunteers:

- cohabitating women aged 20–39 with history of regular menstrual cycles (defined subjectively);
- no indication of primary or secondary infertility;
- currently non-pregnant, menstrual cycle began in last seven days, no use of hormonal contracep-

tives (orals, injectables, or implants) for at least three cycles prior to admission;

- no prior experience with the practice of BO, MM, or LO methods for family planning;
- no intention to use any other method of fertility regulation while using PA; and
- willingness and ability to chart and keep records at least during the first three teaching cycles for the BO and MM methods.

If breastfeeding or postpartum, a woman was included in the study only if she had had three menstrual periods since delivery. The involvement of the husband, both in the learning and effectiveness phases, was encouraged but was not a criterion for eligibility.

For the acceptors of the BO method, all the rules and guidelines as specified by the Billings (Billings, 1964; Billings et al., 1980) were followed. Similarly, the rules as specified by Dorairaj (1980) were followed for the acceptors of the MM method. In contrast to these two methods, the rules for the practice of the LO method were much simpler: the women were simply taught how to identify the fertile and infertile cervical mucus and were instructed to abstain from sexual intercourse during the potentially fertile mucus days. The use of this method did not require daily charting of the mucus patterns, except for the first cycle.

Written informed consent was obtained from each participant after the risks (including pregnancy) and benefits of the practice of the PA methods and the purpose of the study were described fully. Every woman admitted to the study was specifically advised that at any time during the study she could discontinue. The study protocol specified four follow-up visits at three-month intervals. At each visit, detailed information regarding the practice of the PA method taught, menstrual and pregnancy status, and desire for pregnancy, was ascertained. Unplanned pregnancies were defined as those that occurred to women who did not want to be pregnant in the three months following each visit. For those who discontinued, a discontinuation form ascertaining specific reasons for discontinuation was completed.

For the purpose of estimating unplanned pregnancy rates, an adequate sample size was predetermined to be approximately 200 women entering the effectiveness phase for each of the three PA methods. It was expected that about 70 percent of those enrolled in the teaching phase would enter the effectiveness phase. In the WHO multicenter study (WHO, 1981b), nearly 85 percent entered the effectiveness phase.

The study was implemented in five centers in Indonesia: Cilacap, Ruteng, Maumere, Kupang, and Atam-

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bu. All the centers except Cilacap are located in the Nusa Tenggara Timur (NTT) region in Indonesia. The NTT region has a population composition somewhat unusual for Indonesia, with approximately 55 percent Catholic, 40 percent Protestant, and 5 percent Muslim. The majority of the Cilacap population, like that of Indonesia as a whole, is Muslim. Because of the differences in religious composition, both Cilacap and Maumere centers were included in the study despite the fact that the BO was the method practiced in both of these centers. Both Kupang and Atambua were chosen for the MM group because of the expected small number of cases.

Each of the study centers had an ongoing PA program. However, each center specialized in providing teaching and counseling services for only one of the three methods. The choice of the method taught and practiced in each center was therefore taken as given for this study. A preferable approach would have been to conduct a study in which volunteers were randomly assigned to one of the three approaches. This strategy was not feasible, however, because one of the preconditions for conducting the study was that no new services would be provided in any of the centers before assessing the efficacy of the PA method already being taught. The approach of straight assignment was a practical compromise that had to be made to conduct the study.

The bivariate results were obtained by using the Chi-square test of significance for categorical data and by using analysis of variance for data with continuous scales. Data on termination (including reasons for termination) and continuation rates were analyzed by applying the life-table program, LIFETAB (Taylor, 1980). LIFETAB is a generalized multiple-decrement cohort life-table program based on computational methods developed by Potter and extended to allow for simultaneous control for selected independent variables (Potter, 1969; Herson, 1975; Azen et al., 1976).

## Results

Table 1 shows the total number of subjects admitted to the study for each method and the total included in the analysis. Of the 912 women who entered the study during the recruitment, 850 (93 percent) were found to satisfy all the study eligibility criteria. The remaining 62 subjects did not meet one or more of the selection criteria and were hence excluded from the analysis.

About half (53 percent) of the total acceptors used the BO method, one-fourth used the MM method, and the remainder (22 percent) were LO method acceptors. Cilacap center had the highest number of acceptors, followed by Maumere and Ruteng.

**Table 1** Total subjects (acceptors) admitted to the study and total included in analysis, by periodic abstinence method and study center

	Method					
	Billings ovulation		Modified mucus		Local	
Total recruited and analyzed	Cilacap	Maumere	Atambua	Kupang	Ruteng	All
Total no. recruited	220	226	86	142	300	912
Total no. analyzed	234	219	80	129	188	850
Percent (total analyzed)	27.5	25.8	9.4	15.2	22.1	100.0

Note: Sixty-two subjects were excluded from the analysis because they did not meet at least one of the eligibility requirements. The exclusion was not based on whether the subject was able to learn or practice a PA method.

The study subjects for the BO method were recruited in four months. However, it took longer to recruit the MM and LO method users because of disruption of transportation and communication services due to landslides and volcanic eruptions in the region and other logistical difficulties. Overall, 114 subjects per month were admitted.

## Sociodemographic Characteristics

Table 2 presents the socioeconomic and demographic profiles of the acceptors. Acceptors of the MM method were more educated than acceptors of the other two methods. The LO method acceptors were the least educated ( $p < .001$ ).

Almost all of the LO method acceptors (99 percent) and over three-fourths (78 percent) of the MM method acceptors were Catholics. The BO method acceptors were divided almost evenly between Catholics and Muslims. The acceptors were also asked to assess the relative importance of their religion: not important, somewhat important, or very important. Most LO and MM method acceptors said that religion was very important to them, whereas only less than half of the BO method acceptors said that religion was very important to them ( $p < .001$ ). The average age of all acceptors was 28–29 years, with the LO method acceptors being the youngest ( $p < .01$ ). The subjects had been married for an average of about eight years and their husbands were about four years older (Thapa et al., 1989). The mean number of live births was about three, with no significant variation among the three groups of acceptors. A similar pattern was found with regard to the the average number of living children.

The LO method acceptors wanted an average of two additional children. In contrast, the MM method acceptors wanted only about one additional child. These differences were statistically significant ( $p < .001$ ). There was fairly good agreement on the number of additional children desired between the wives and husbands (as reported by wives), except among the MM method acceptors

**Table 2** Socioeconomic and demographic characteristics of the acceptors, by periodic abstinence method

Characteristic	Percent/Mean per method		
	Billings ovulation	Modified mucus	Local
<b>Education (years)</b>			
None	2.6	5.7	13.4
1-5	27.6	4.3	21.4
6-10	55.8	72.9	60.4
11+	13.9	17.1	4.8
Mean	6.4±3.1	7.2±3.1	5.4±3.0
<b>Religion</b>			
Catholic	47.2	78.1	98.9
Other Christian	2.4	18.6	0.5
Muslim	49.9	2.9	0.5
Other	0.4	0.5	0.0
<b>Importance of religion</b>			
Not important	1.5	0.0	0.0
Somewhat important	57.4	21.4	5.3
Very important	41.1	78.6	94.7
<b>Age</b>			
20-24	21.0	27.6	35.3
25-29	30.2	35.7	29.4
30-34	28.7	25.7	21.4
35-39	19.2	11.0	13.9
Mean	29.1±5.3	28.0±4.6	27.7±5.4
<b>Number of living children</b>			
1	27.2	21.0	27.3
2	25.6	25.7	22.5
3	21.0	21.0	13.9
4	12.1	13.3	12.3
5+	14.1	19.0	24.1
Mean	2.8±1.8	3.0±1.8	3.1±2.2
<b>Additional children desired</b>			
0	33.5	35.2	14.4
1	31.3	24.3	18.2
2	21.9	25.2	24.6
3	5.1	6.2	24.6
4+	1.3	1.0	18.0
Non-numeric/missing	6.9	8.1	2.1
Mean	1.53±0.9	1.06±1.0	2.13±1.4

Note: Percentage distribution of each categorical variable equals 100. Some may not add to 100 because of rounding.

(Thapa et al., 1989). The correlation ranged from a high of .90 (LO method) to a low of .50 (MM method).

### Awareness and Use of Family Planning Methods

Table 3 shows the level of prior awareness (at the time of admittance to the study) and ever-use of the various methods of family planning (classified into two major categories—supply and non-supply methods) among the three groups of acceptors. Awareness of BO, withdrawal, and calendar-rhythm was relatively high among the BO method acceptors. However, fewer than 10 percent had ever used these methods. As regards the supply methods, most acceptors had heard of condoms, pills, IUDs, and injectables, but ever-use of these methods was low.

Awareness about the calendar-rhythm, BO, and MM method was relatively high among the MM method

acceptors, but very few had ever used them. Most MM method acceptors had heard of condoms, pills, IUDs, and injectables, but most had never used these methods.

A different picture emerged among the LO method acceptors. Most had never heard of any of the non-supply methods, except the BO method. With respect to supply methods, 70 percent had heard of IUDs, but the LO method acceptors' awareness of pills and injectables was relatively low, slightly more than one in three.

### Reasons for Using PA Methods

The main reasons for wanting to use PA and the primary reason for choosing PA methods over other family planning methods are shown in Table 4. There were significant variations ( $p < .001$ ) among the three groups of acceptors. About four out of five of the LO method acceptors wanted to use PA for spacing, whereas only about three in five MM and BO methods acceptors wanted to use PA methods for spacing. About two-fifths of the MM method acceptors, every third BO method acceptor, and only one out of eight LO method acceptors wished to stop having children.

Among all the groups of acceptors, fear of or actual side effects was the primary reason for choosing PA over

**Table 3** Awareness and use of non-supply and supply methods of family planning, by the acceptors of each method

Family planning method	Percent of acceptors*					
	Billings ovulation		Modified mucus		Local	
	Never heard of method	Ever used	Never heard of method	Ever used	Never heard of method	Ever used
<b>Non-supply methods</b>						
Calendar-rhythm	60.7	7.7	51.9	5.7	92.0	1.1
Basal body	99.1	0.0	88.6	0.0	97.3	0.0
Sympto-thermal	99.8	0.0	90.5	0.0	98.4	0.0
Billings ovulation	54.7	0.2	58.6	0.0	41.2	0.0
Modified mucus	99.6	0.0	35.2	0.0	99.5	0.0
Local	99.1	0.0	79.0	0.0	95.2	0.0
Withdrawal	57.2	7.7	68.6	2.9	00.4	5.3
Other	96.2	3.5	99.5	0.0	97.9	2.1
<b>Supply methods</b>						
Condoms	13.0	3.5	6.2	0.0	92.0	0.0
Female barrier	98.0	0.0	86.2	0.0	98.0	0.0
Pills	3.1	7.5	1.0	3.8	66.3	3.7
IUD	6.4	4.4	2.4	2.9	30.5	9.1
Injectables	5.5	5.3	2.4	8.1	63.6	2.1
Vasectomy	42.8	0.0	15.7	0.0	90.4	0.0
Female sterilization	44.8	0.0	23.3	0.0	90.4	0.0
Implants	70.6	0.0	88.1	0.0	95.2	1.0

Note: The data refer to awareness and use before the acceptance of each method.

\* Percent distribution is given for each method across. The percent distribution for "heard of but never used method" category is not shown; it is the residual difference between the percent distribution shown for each method. For example, among the Billings ovulation method acceptors, 31.6 percent had heard of but never used the calendar-rhythm method.

**Table 4** Reasons for wanting to use PA and primary reasons for choosing PA over other methods, by method

Variable	Percent of acceptors		
	Billings ovulation	Modified mucus	Local
<b>Reason for wanting to use PA</b>			
To space	62.9	57.6	83.4
To limit	30.2	41.4	13.4
Other	6.8	1.0	3.2
<b>Reason for choosing PA over other methods</b>			
Religious conviction	4.0	33.8	33.2
Fear of or actual side effects of supply methods	87.6	65.2	57.2
Other method not available	0.2	0.5	0.5
Other	8.2	0.5	9.1

Note: Percentage distribution of each variable equals 100. Some may not add to 100 because of rounding.

other "supply methods" of family planning. It was almost the sole reason among the BO method acceptors and the predominant reason among acceptors of the other two methods. For about one-third of the MM and LO methods acceptors, religious conviction was the reason for not choosing supply methods.

Nearly all the acceptors had discussed practicing PA with their husbands (Thapa et al., 1989). The majority of them expected a high level of cooperation from their husbands. Furthermore, there were no significant differences with regard to discussions with husbands among the three types of acceptors.

### Efficacy

Life-table total discontinuation (all events) rates and event-specific discontinuation rates for the learning and effectiveness phases were analyzed separately by the PA methods. These rates were calculated controlling and not controlling for the effects of age differentials among the three groups of acceptors (Thapa et al., 1989). In this report, only the rates adjusted for age differentials are given.

Table 5 shows the life-table rates and tests of significance between the PA methods at three months post-acceptance (that is, the end of the learning phase). The rates for specific reasons for discontinuation in this and subsequent tables are gross (and therefore not additive). The use of gross rates allows the evaluation of each reason for termination of each method, independently of all other reasons for termination.

Total discontinuation rates at three months among the BO and MM method users were about 6 per 100 women, while the rate among the LO method users was four times higher—over 23 per 100 women. Differences in the total discontinuation rates among the three method

**Table 5** Cumulative life-table discontinuation rates (per 100 women), adjusted for age differentials, at the end of the three-month learning phase, and p-values, by method

Value	Life-table rates <sup>a</sup>			
	Billings ovulation	Modified mucus	Local	
All events	6.1 (1.14)	6.1 (1.64)	23.3 (3.08)	
<b>Reason for termination</b>				
Unplanned pregnancy	2.4 (0.76)	3.2 (1.19)	16.5 (2.70)	
Planned pregnancy	0.9 (0.46)	1.3 (0.77)	1.4 (0.99)	
Medical	0.0 (0.00)	0.5 (0.49)	1.2 (0.82)	
Personal	2.8 (0.77)	1.2 (0.82)	6.7 (1.87)	
Follow-up rate	97.1	96.1	94.1	
Woman-months	1,335.5	609.5	508.0	
(N)	453	209	188	
<b>P-values</b>				
<b>Method comparison<sup>b</sup></b>				
	BO vs MM	BO vs LO	MM vs LO	BO vs MM vs LO
All events	.923	<.001	<.001	<.001
Unplanned pregnancy	.659	<.001	<.001	<.001
Planned pregnancy	.901	.993	.931	.777
Medical	.655	.167	.817	.094
Personal	.280	.170	.025	.033

<sup>a</sup> Standard errors are given in parentheses. <sup>b</sup> BO: Billings ovulation; MM: modified mucus; LO: local.

acceptors were highly significant. However, discontinuation rates between the BO and MM method acceptors were similar.

Unplanned pregnancy rates in the learning phase ranged from a low of 2.4 per 100 women for the BO method to a high of 16.5 per 100 women for the LO method acceptors. The overall differences in unplanned pregnancy rates were statistically significant. However, the rates between the BO and MM method acceptors were similar. Unplanned pregnancy was the primary reason for discontinuation among the MM and LO method acceptors. Discontinuation due to personal reasons was higher for the LO method acceptors than for the MM method acceptors. There were no statistically significant differences among the three method acceptors with regard to discontinuation of respective methods due to planned pregnancy or medical reasons.

Table 6 shows cumulative life-table total discontinuation (all events) rates and event-specific discontinuation rates, standardized for age, for acceptors of the three PA methods at the end of the effectiveness phase. The total discontinuation rates were lowest (10.4 per 100 women among the BO method acceptors and highest (26.5 per 100 women) among the LO method acceptors. Differences in total discontinuation rates between the MM and LO methods acceptors were not significant, although both rates were significantly higher than the rate for the BO method acceptors.

**Table 6** Cumulative life-table discontinuation rates (per 100 women), adjusted for age differentials, and p-values at the end of the 12-month effectiveness phase, by method

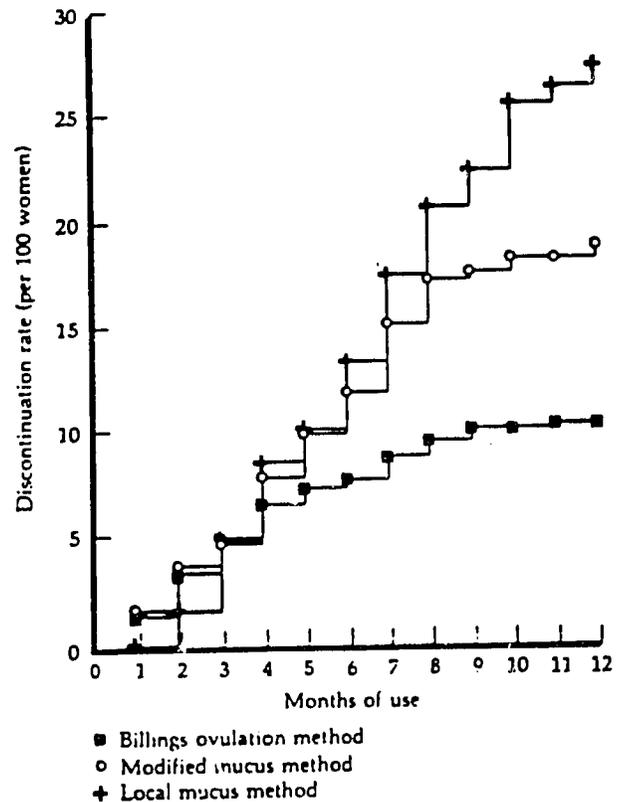
Value	Life-table rates <sup>a</sup>			
	Billings ovulation	Modified mucus	Local	
All events	10.4 (1.51)	18.8 (2.85)	26.5 (3.94)	
Reason for termination				
Unplanned pregnancy	2.5 (0.79)	10.3 (2.18)	11.5 (2.92)	
Planned pregnancy	3.3 (0.89)	3.5 (1.39)	4.7 (2.29)	
Medical	1.2 (0.54)	0.0 (0.00)	6.1 (2.32)	
Personal	3.8 (0.97)	6.2 (1.93)	7.3 (2.33)	
Follow-up rate	95.2	93.4	91.1	
Woman-months (N)	4,680.0 (420)	2,053.5 (195)	1,320.0 (131)	
	P-values			
	Method comparison <sup>b</sup>			
	BO vs MM	BO vs LO	MM vs LO	BO vs MM vs LO
All events	.016	<.001	.138	<.001
Unplanned pregnancy	<.001	<.001	.983	<.001
Planned pregnancy	.858	.978	.960	.958
Medical	.316	.015	.005	<.001
Personal	.660	.223	.619	.274

<sup>a</sup> Standard errors are given in parentheses. <sup>b</sup> BO: Billings ovulation; MM: modified mucus; LO: local.

As in the learning phase, the main reason for terminations in the effectiveness phase for the MM and LO method acceptors was unplanned pregnancy. The unplanned pregnancy rates between these two groups of acceptors were similar. Terminations for medical reasons were significantly higher among the LO method users than among the BO and MM methods users. However, terminations due to planned pregnancy and personal reasons did not vary by method. Effectiveness was also analyzed by levels of educational attainment of the acceptors of each of the methods. Discontinuation rates were higher for women with lower educational attainment (Thapa et al., 1989). However, the basic patterns of differentials in effectiveness between methods (as shown in Table 6) remained intact.

Effectiveness was further analyzed for each of the methods by the study subjects' family planning intentions—to space their next pregnancy or to limit. The results showed that the "limiters" had significantly lower overall termination rates than did the "spacers" during both the learning and effectiveness phases (Thapa et al., 1989). Differences in specific event rates between "limiters" and "spacers" were not significant except for unplanned pregnancies, where the spacers' rates were higher than the limiters' rates by a ratio of approximately 4:1. Of more importance, event-specific discontinuation rates (standardized for age differentials) were analyzed among the spacers only by the three methods. The un-

**Figure 1** Cumulative life-table total discontinuation rates (per 100 women) in the effectiveness phase for three variations of periodic abstinence methods, Indonesia



planned pregnancy rates (per 100 women) for the BO and LO method acceptors were  $2.0 \pm 0.9$  and  $14.3 \pm 3.6$ , respectively. These differences were statistically significant ( $p < .001$ ). However, the differences between the LO and MM ( $16.3 \pm 3.6$ ) method users were not significant. Overall, these results showed that even among the spacers the BO method had significantly lower unplanned pregnancy rates than did the other two methods.

Figure 1 shows the cumulative life-table discontinuation rates, by month, for each method during the effectiveness phase.

## Summary and Conclusions

The central objective of the study was to evaluate the efficacy of three PA methods practiced in Indonesia for purposes of possibly selecting one for inclusion in Indonesia's national family planning program. The study was carried out prospectively in five centers where there was an existing program to provide instructions and counseling services on PA methods.

In the analysis of pregnancy rates, no attempts were made to distinguish between method failure and teach-

ing (learning) or user failures, as has been done in some other studies (WHO, 1981b; see, however, Trussel and Kost, 1987). Hence, the pregnancy rates in the present study were a composite of both method and user failures.

The life-table analysis of the data showed that in the learning phase unplanned pregnancy and total termination rates for the BO and MM method users were consistently and significantly lower than the rates for the LO method users. In the effectiveness phase, the unplanned pregnancy rate among the BO method users was significantly lower than the rates for the MM and LO method users. The failure rate among MM users in the effectiveness phase was close to that of LO users, whereas in the learning phase it was closer to that of the BO users. This suggests that while the efficacy of the BO method remained stable over time, it worsened for the other two methods.

Of the three methods, the only method that showed consistently and significantly low unplanned pregnancy and overall termination rates was the BO method. The analysis further showed that the patterns of differentials in overall and unplanned pregnancy termination rates were not due to differentials in age or educational attainment among the three group of acceptors. The unplanned pregnancy rates for the BO method users were within the range of those reported in other international studies (WHO, 1981b).

The practice of the PA methods such as MM and LO that are characterized by more relaxed and simpler rules for observation of fertile and infertile days of the menstrual cycle and for abstaining from sexual intercourse also have less intensity and frequency of visits by the counselor/teacher in the learning phase. Because of this, part of the higher rates of unplanned pregnancy, at least in the learning phase, may be related to a lower level of supervision and counseling and consequently lower motivation to use the method diligently. However, the degree of continuing guidance or counseling is no longer a contributing factor in the effectiveness phase after the acceptor becomes an autonomous user. Therefore, in the effectiveness phase, the low accidental pregnancy rate for the BO method appears to be due to the fact that this method, through its more stringent rules and guidelines, eliminates many more of the potentially fertile days in the menstrual cycle than do the other two methods.

The results of this study suggest there is no easy and short-cut approach to using a cervical mucus method that obtains a high level of efficacy. In this regard, these methods of family planning may be acceptable only to those couples who can maintain a high degree of daily motivation (unlike with the use of other methods such as injectables, implants, or IUDs) to conform to the absti-

nence rules, observation, and charting of the mucus patterns.

## Acknowledgments

BKKBN staff, especially Haryono Suyono, E. Srihartati Pandi, and Sunarti Sudumo, provided guidance and assistance in the formulation and implementation of the study project. Naftali Tibuluji and Felix Soebroto served as consultants. Elizabeth Kirana assisted with the daily management of the project. Data entry and initial processing of the data were carried out by Soesanti Soekandar and Prihandoko Achwandi at BKS PENFIN in Bandung. David Denman and Carol Carpenter-Yaman at A.I.D./Jakarta provided input and coordination. Nancy Piet-Pelon helped with Bhasa Indonesia translation of the forms. Mark Robbins assisted with monitoring and Rosalie Dominik assisted with the application of software programs. Jeff Spieler, Rosalie Dominik, Suzanne Parenteau-Carreau, Nancy Williamson, and anonymous reviewers provided many helpful comments. The authors acknowledge with appreciation the valuable input and assistance provided by these individuals and agencies for the successful completion of the project that provided the data base for this report.

Support for this study was provided by the Research Division, Office of Population, U.S. Agency for International Development. The views expressed here are, however, those of the authors and not necessarily those of the funding agency, reviewers, or others associated with the study.

The study results were presented by the co-investigators, first at a research dissemination seminar at BKKBN headquarters in Jakarta and subsequently at several regional and local-level seminars in Indonesia.

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