

USE EFFECTIVENESS OF FAMILY PLANNING IN THE PHILIPPINES, 1970-72

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In the past, evaluation of the Philippine family planning program has focused largely on acceptances at program clinics. The present paper reports the results of the first effort to obtain national-level measures of continuation and fertility following acceptance. Data from the 1972 National Acceptor Survey are analyzed by means of life-table techniques, revealing sharp differences between the three major program methods: IUD acceptors have the highest continuation rates and lowest pregnancy rates following acceptance; rhythm acceptors have the lowest continuation and highest pregnancy rates; pill acceptors tend to fall about midway between these extremes. Method changes and reasons for discontinuation are also investigated.

In January-March 1972, a survey was conducted among a national probability sample of women who had been registered as new acceptors in 45 family-planning clinics during 1970. The National Acceptor Survey (NAS), as it was called, was designed primarily for the purpose of measuring the family-planning experience of the respondents following acceptance. Of particular interest were the following questions.

1. What is the likelihood that an acceptor is still using contraception at the end of any given period of time following acceptance, and what are the reasons for discontinuing contraceptive use?
2. What is the likelihood that an acceptor will become pregnant within any given period of time following acceptance?

The present paper attempts to answer these questions on the basis of data from the NAS. Section I presents and discusses method-specific continuation rates and reasons for discontinuation. Section II presents and discusses method-specific pregnancy rates.

As with any survey, there is some question about the extent to which the NAS data may be viewed as applicable to the entire population of acceptors at Philippine family-planning clinics. This question will be discussed in another

paper. For the present, it is sufficient to note that inspection of the NAS data indicates that they provide estimates that are probably close approximations of the national figures and certainly the best presently available.

I. Continuation Rates

Continuation rates measure the probability that a woman who accepts a method of contraception will still be protected at the end of a given period of time. They are usually stated as numbers of continuing users per hundred acceptors at the end of a particular ordinal month. For example, a 12-month continuation rate of 70 can be interpreted to mean that if 100 women accept on the same day, only 70 will still be protected at the end of 12 months. In terms of probability, a 12-month continuation rate of 70 means that there is a 70-percent likelihood that an acceptor will be a continuing user one year after acceptance. The continuation rates presented in this section have been computed by means of life-table analysis, the computational procedures for which have been described and illustrated by Robert Potter (1967).

Two types of continuation rates are considered in this section: the first-method con-

tinuation rate and the all-method continuation rate. The former is the probability that an acceptor of a particular method will still be using the same method at the end of a given period of time. It is particularly useful for evaluating a family-planning program that relies on only one method or for comparing experience with individual methods in a multi-method program. The all-method continuation rate measures the likelihood that a family-planning acceptor will still be using any method of contraception at the end of a given period of time. Such rates are usually preferable to first-method rates in evaluating multi-method programs, since they allow for the possibility that a woman who stops using one method may shift to another – possibly better – method.

First-method continuation rates

The first-method continuation rates for selected periods of time following acceptance are shown, by method first accepted, in Table 1 and Figure 1. It can be seen that the most successful method by this criterion was the IUD. By the end of six months, 86 percent of the IUD acceptors still retained the device, whereas only two-thirds of the pill or rhythm acceptors and less than half of the acceptors of other methods were still using their first method after the same period of time. By the end of 12 months, less than one-fourth of the IUD acceptors had stopped using the IUD, but about half of the pill and rhythm acceptors had stopped using their first methods. At the end of two years, nearly two-thirds of the IUD acceptors were still using the IUD whereas only a little more than one-third of the pill acceptors were still taking pills.

The differences in first-method continuation rates are not surprising. The IUD is the only major method that does not require sustained motivation to ensure continued use. On the contrary, once the IUD acceptor has had the device inserted she usually has to make a positive effort in order to stop using it, the only exception being cases of involuntary expulsion or accidental pregnancy. Pill acceptors, on the other hand, must make a continual effort to continue using pills – going to the clinic or

Table 1

First-method continuation rates and 95-percent confidence intervals, by first method accepted (NAS, 1972)

Month (m)	Number continuing per 100 acceptors ^a (and confidence interval)				Number of cases beginning month m				
	Pills	IUD	Rhythm	Other	Pills	IUD	Rhythm	Other	
1	85 (83.2-87.0)	95 (93.0-96.6)	90 (86.2-93.2)	66 (58.7-73.3)	1017	535	233	70	
2	78 (76.1-80.5)	93 (91.0-95.2)	84 (79.4-88.0)	52 (43.2-60.0)	859	507	208	46	
3	74 (71.2-76.0)	92 (89.6-94.0)	78 (73.1-82.9)	49 (40.1-57.5)	788	498	191	36	
4	70 (67.9-72.9)	90 (87.4-92.4)	75 (69.7-80.1)	46 (36.9-54.9)	739	489	176	34	
5	68 (65.6-70.8)	88 (85.8-91.0)	71 (65.4-76.4)	42 (32.3-50.7)	705	477	168	31	
6	66 (62.9-68.3)	86 (83.0-88.8)	65 (58.9-70.3)	40 (30.7-49.3)	680	468	158	27	
12	54 (51.1-56.9)	77 (73.3-80.3)	46 (39.7-51.9)	[21] (12.8-29.4)	542	405	105	14	
18	44 (40.7-46.9)	71 (66.9-74.7)	41 (34.3-46.9)	[16] (7.1-24.1)	265	217	47	5	
24	36 (31.8-39.2)	63 (57.7-68.3)	[34] (25.7-42.9)	-	64	66	7	0	

^a Brackets denote less reliable rates, where the number of cases beginning the current month is less than 20. A hyphen denotes no cases beginning the current month.

pharmacy every month or two for a new supply and remembering to take a pill each day. In order to stop using the pills, they have only to stop going to the trouble of buying and swallowing them. The rhythm method, similarly, requires sustained motivation. Although rhythm does not require continual purchases of supplies, it nevertheless calls for a high level of self control. Moreover, it requires the efforts of both husband and wife. The only surprising thing about the continuation rates of rhythm acceptors is that they are nearly as high as the pill continuation rates, despite rhythm's added requirement of cooperation between husband and wife and its high failure rate (see below).

The "other" methods referred to in Table 1 are mostly condoms and foam, both of which not only require continual purchases of resupply and regular use but also involve the additional disadvantage of reducing the enjoyment of sexual relations.

International comparison. First-method continuation rates for pills and the IUD are available for a variety of other national programs. The Philippine rates for both methods fall within the range of rates found for other programs. With regard to the IUD, the Philippine first-method rates tend to be higher than the rates commonly reported for other countries. Reported 24-month IUD rates include rates as low as 44, in Korea (Shin and Kim 1968), and as high as 69, in Ceylon (Wright 1970). The Philippine rate of 63 is much closer to the high figure than to the low one. In most Asian programs, the corresponding rate is usually in the neighborhood of 55. With regard to pills, the international figures tend to be more diverse. However, 12-month rates range from Korea's 23 (Kwon 1968) to West Malaysia's 62 (Tan and Takeshita 1970). The Philippine figure, 54, again is relatively high but not exceptionally so.

It should be noted that the Philippine figures are based only on the post-acceptance experience of respondents who stated that they had actually used a method of family planning obtained from the clinic where they were registered. Women who denied that they had

used a method obtained from the clinic were defined as "nonacceptors" and excluded from the lifetable analysis. It is possible that such cases were included in the derivation of continuation rates for some programs, in which case they would have been viewed as dropouts within the first month after acceptance, resulting in deflated continuation rates vis-a-vis the Philippine figures.¹

Reasons for discontinuing the first method.

The reasons most commonly given for discontinuing use of the first method (Table 2) were side effects and other medical reasons. (These two types of response categories were not differentiated because of the large proportion of specific reasons which can be described equally well as side effects or medical complaints and because of the sizeable number of side effects whose medical validity is uncertain.) As Table 2 shows, half (49 percent) of all acceptors who stopped using their first method did so because of side effects or medical reasons. Such reasons were especially common for pill acceptors, nearly two-thirds (66 percent) of whom cited them, and only somewhat less so (44 percent) for IUD acceptors. For rhythm and other methods, side effects were of relatively little importance.

The second most common reason for termination was accidental pregnancy (method failure). One-sixth (16 percent) of all first-method terminations were attributed to this cause. However, method failure was an important cause of termination only for rhythm acceptors. Although a majority (62 percent) of rhythm dropouts cited accidental pregnancy, the proportions for other acceptors ranged from 6.5 percent (pills) to only 14.3 percent ("other" methods).

No other reasons stood out as particularly important among all acceptors taken as a whole (disregarding method). After side effects and pregnancy, the reasons most commonly given were desire for another child (6 percent), IUD expulsion (5 percent), husband's objections or non-cooperation (4 percent), fears about the method (4 percent) and the respondent's belief that she no longer needed contraception, usually

Table 2

Percentage distribution of first-method dropouts, by reason for terminating first-method and by method accepted (NAS, 1972)

Reason for termination	Method accepted				Total
	Pills	IUD	Rhythm	Other	
Side effects, medical reasons	65.8	44.3	1.4	12.5	49.5
Pregnancy (method failure)	6.5	12.1	62.4	14.3	16.0
Wanted another child	4.9	5.7	9.5	12.5	6.2
IUD expulsion	0.0	26.4	0.0	0.0	4.8
Husband objected, uncooperative	2.6	1.1	10.2	12.5	4.0
Fears about the method	4.1	4.6	1.4	0.0	3.6
No need (too old, widowed, etc.)	3.7	2.9	0.7	3.6	3.1
Difficult to use	1.0	0.6	4.3	12.5	2.1
Forgot to use	2.4	0.0	2.9	0.0	1.9
Cost	2.4	0.0	0.0	5.4	1.8
Others	6.6	2.3	7.2	26.7	7.0
TOTAL	100.0	100.0	100.0	100.0	100.0
Number of dropouts	588	174	138	56	956

because of sterility, separation, or widowhood (3 percent).

The reasons for termination may be grouped according to whether the termination resulted from the couple's own decision (e.g., side effects, desire for another child, husband's objection) or was involuntary (e.g., pregnancy, IUD expulsion, no need). When the responses are dichotomized in this manner, it is found that three-fourths of the terminations (76 percent) were voluntary. However, there is considerable variation by method:

<i>Method</i>	<i>Percentage voluntary</i>
Pills	90
IUD	59
Rhythm	37
Other	82

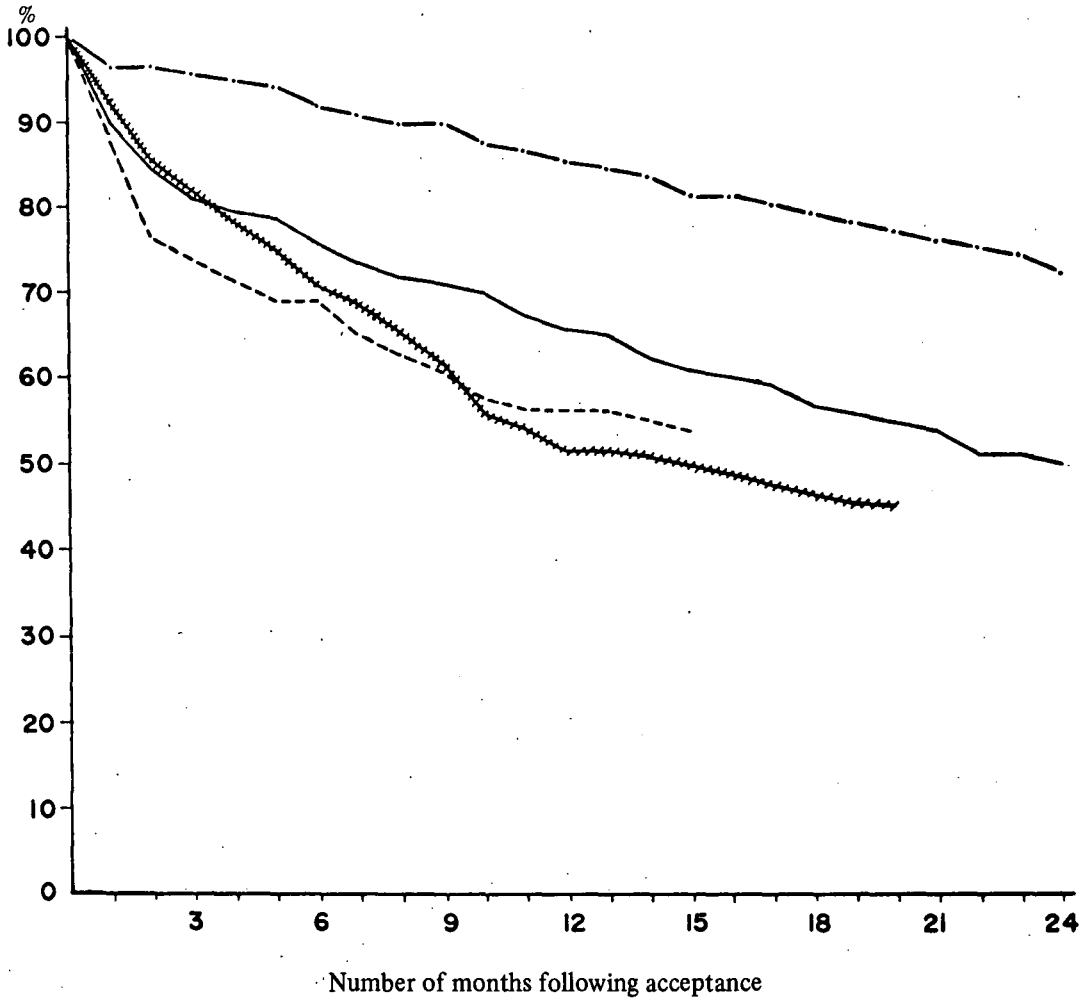
Acceptors of the rhythm method are the least likely to stop voluntarily. Pill acceptors in contrast, are far more likely to stop voluntarily. IUD acceptors are substantially less likely than pill acceptors but more likely than rhythm acceptors to do so. Acceptors of "other"

methods are, like pill acceptors, especially likely to terminate use voluntarily.

These findings strongly suggest that pills, condom, and foam are relatively unpleasant or inconvenient methods for Philippine women. Despite the relatively high motivation to try the pills, clients appear to have difficulty sustaining their enthusiasm following acceptance. Rhythm, on the other hand, appears to be much more acceptable to those who try it, despite its high failure rate and the difficulty involved in abstaining during the fertile period. The IUD is probably not much more acceptable than the pills, but the likelihood of voluntary termination is reduced by the fact that removal usually requires a special visit to the clinic.

All-method continuation rates

The findings for all-method continuation rates (Table 3 and Figure 2) are much like the findings for first-method rates, with the exception that the all-method rates are higher than the corresponding first-method rates. The differences between an all-method rate and its corresponding first-method rate is the pro-



LEGEND:

- PILLS _____
- IUD _____
- RHYTHM _____
- OTHERS _____

Fig. 2 – All-method continuation rates (probability of continued use of any method by method first accepted but before any conception); National Acceptor Survey, 1972

Table 3

All-method continuation rates and 95-percent confidence intervals, by first method accepted (NAS, 1972)

Month (m)	Number continuing per 100 acceptors ^a (and confidence interval)				Number of cases beginning month m			
	Pills	IUD	Rhythm	Other	Pills	IUD	Rhythm	Other
1	90 (88.2-91.6)	97 (96.1-98.7)	92 (88.2-94.8)	89 (82.1-95.3)	1018	535	234	70
2	85 (83.3-87.3)	97 (95.3-98.3)	86 (82.2-90.4)	77 (68.6-85.8)	909	521	213	62
3	82 (80.0-84.4)	96 (94.5-97.7)	83 (78.3-87.3)	74 (65.3-83.5)	859	518	198	54
4	80 (77.6-82.4)	95 (93.5-97.1)	79 (74.4-84.2)	72 (62.0-81.0)	826	512	188	52
5	79 (76.3-81.1)	94 (92.0-96.0)	76 (70.6-81.0)	69 (58.7-78.5)	802	506	179	49
6	76 (73.8-78.8)	93 (90.3-94.7)	71 (65.4-76.4)	69 (58.7-78.5)	785	498	169	46
12	66 (63.6-69.2)	86 (82.9-88.7)	53 (46.3-58.7)	56 (45.4-67.4)	650	452	119	36
18	57 (54.1-60.3)	80 (76.5-83.7)	47 (40.6-53.6)	[47] (34.3-59.3)	327	243	54	15
24	50 (46.3-54.1)	73 (67.9-78.3)	[46] (39.3-52.7)	-	89	73	10	0

^aBrackets denote less reliable rates, where the number of cases beginning the current month is less than 20. A hyphen denotes no cases beginning the current month.

portion of acceptors who shifted methods and were still using the later method at the end of the specified time period. For instance, although only 36 percent of the pill acceptors were still using pills at the end of 24 months (Table 1), fully 50 percent were using some method of contraception; 14 percent of the pill acceptors (the difference between 50 percent and 36 percent) were using a different method at the end of the 24-month period. In the Philippines, the all-method continuation rates are more meaningful than the first-method continuation rates for the purpose of program evaluation, since the Philippine program does not rely on any single method. The objective of the Philippine program is to provide protection against unwanted pregnancies rather than to promote continuous use of the first method selected.

From the standpoint of all-method continuation rates, the IUD again stands out as the most effective method in the Philippine program. Only 14 percent of the IUD acceptors stopped using contraception altogether within one year after use. In contrast, one-third of the pill acceptors and nearly half of the acceptors of rhythm and "other" methods stopped using contraception during the same period. By the end of two years after acceptance nearly three-fourths of the IUD acceptors but only one-half of the pill acceptors were still using contraception.

Method changes. From the figures in Tables 1 and 3, it is possible to compute, for any time period shown, the proportion of first-method dropouts who were using other methods.² This proportion is computed by means of the formula,

$$S = 1 - (T_a/T_f),$$

where S is the proportion of dropouts who shifted, T_a is the all-method termination rate (i.e., one minus the all-method continuation rate), and T_f is the first-method termination rate.

The proportions based on this formula applied to selected time periods are shown in Table 4. The figure for each period shown refers to the proportion of dropouts during the period who had shifted to and were still using a method other than the one first selected. They thus

Table 4

Percentage of first-month dropouts who changed methods, by method first accepted, for selected time periods since acceptance (NAS, 1972)

Month	Method first accepted ^a			
	Pills	IUD	Rhythm	Other
6	29	50	17	48
12	26	39	13	[44]
18	23	31	10	[37]
24	22	27	[18]	-

^aNumbers in brackets are based on relatively unreliable continuation rates. A hyphen indicates insufficient data for computation.

disregard changes to methods that were terminated before the end of the period. It may be seen that for all time periods for which related data are available, the rhythm dropouts were least likely to shift to other methods. Pill acceptors were somewhat more likely and acceptors of IUD and other methods especially likely to do so. The magnitude of these differences became less pronounced with time; nevertheless, even at the end of 24 months the differences were still apparent.

The proportions of dropouts who were still using other methods decreased as the time period increased, but this finding should not be

interpreted as indicating that women who stop using their first method after a longer period of use are less likely to shift to other methods; the opposite may well be true. Rather, the longer period of time since acceptance was associated with a longer mean interval since the shift to later methods and therefore greater likelihood of termination among those who had shifted relatively shortly after acceptance.

Among those first-method dropouts who changed methods, the new method varied according to the method initially accepted (Table 5). Pill shifters were most likely to shift to rhythm or withdrawal, nearly one-third selecting each of these relatively ineffective methods. Only about one-fifth shifted to the IUD despite its high degree of effectiveness. Among shifters from the IUD, in contrast, more than half (58 percent) selected pills, while only one-fourth (27 percent) shifted to rhythm or withdrawal. Thus, shifters from the IUD were likely to select more effective substitute methods than were shifters from pills. Rhythm shifters were even more likely to change to pills. The pattern for "other" acceptors was much like that for IUD.

The net effect of these shifts was that the "most recent" method among shifters as a whole was equally likely to be pills (24 percent), rhythm (23 percent), and withdrawal (24 percent) and less likely to be the IUD (15 percent) or other methods (14 percent). In contrast,

Table 5

Percentage distribution of acceptors who changed methods, by most recent method, controlling for method first accepted (NAS, 1972)

Most recent method	First method				Total
	Pills	IUD	Rhythm	Other	
Pills	-	57.8	80.8	51.5	24.3
IUD	21.5	-	7.7	14.3	14.6
Rhythm	30.9	13.4	-	11.4	22.8
Withdrawal	31.3	13.4	7.7	17.1	24.0
Condom	8.6	7.2	0.0	0.0	6.9
Other	7.7	8.2	3.8	5.7	7.4
TOTAL	100.0	100.0	100.0	100.0	100.0
Number who changed methods	233	97	26	35	391

five-sixths (84 percent) of the NAS acceptors had selected pills or the IUD initially; only 13 percent had accepted rhythm and less than 1 percent had accepted withdrawal. On balance, then, the quality of the later method tended to be considerably poorer than the quality of the first method. The effect of this tendency on the distribution of all acceptors (including those who did not shift) by most recent method may be seen in Table 6. The proportion of pill and IUD acceptors fell from 84 percent to 74 percent; other less effective methods rose correspondingly, withdrawal accounting for two-thirds of the increase.

Reasons for discontinuation of last method.

The discontinuation of the most recent method is conceptually different from the discontinuation of a method which will be followed by use of another method. The former implies a greater degree of finality than the latter, and the reasons might therefore be of a different order. Table 7 provides the data necessary to test this hypothesis; the percentage distributions of reasons for termination of the first and most recent methods

Table 6

Marginal percentage distributions of acceptors, by first method and most recent method (NAS, 1972)

Method	First		Most recent ^a
Pills	54.9	>	47.4
IUD	28.7	>	26.6
Rhythm	12.6	<	16.0
Withdrawal	.7	<	7.1
Condom	1.2	<	2.2
Other	1.9	<	2.1

^aIncluding first method of acceptors who did not change methods.

are shown together for comparison. It may be seen that pregnancy, desire for another child, and "no need" are more commonly given as reasons for termination of the most recent method and therefore tend to signal a more permanent termination at least until after the next pregnancy. Side effects, IUD expulsion,

Table 7

Percentage distribution of family-planning dropouts, by reason for terminating most recent method and comparable first method figures (NAS, 1972)

Reason for termination	Most recent method	First method
Side effects, medical reasons	33.4	49.5
Pregnancy (method failure)	31.9	16.0
Wanted another child	9.7	6.2
IUD expulsion	2.3	4.8
Husband objected, uncooperative	4.8	4.0
Fears about the method	2.6	3.6
No need (too old, widowed, etc.)	4.4	3.1
Difficult to use	1.0	2.1
Forgot to use	2.1	1.9
Cost	1.4	1.8
Others	6.4	7.0
TOTAL	100.0	100.0
Number of dropouts	725	956

and fears about the method are more commonly given as reasons for termination of the first method and therefore associated more with the desire to change methods rather than terminate contraceptive use altogether.

II. Pregnancy Rates

Two kinds of pregnancy rates will be discussed in this section: the first-method pregnancy rate and the overall postacceptance pregnancy rate. The first is the proportion of acceptors who became pregnant during the specified time period while using the first method. The overall post-acceptance pregnancy rate is the proportion of acceptors who became pregnant at all during the specified period following acceptance, whether while still using any method of contraception or not. No distinction is made between whether the pregnancy was desired or not.

First-method pregnancy rates

The first-method pregnancy rate is a measure of the effectiveness of the method first accepted while it is in use in the particular setting under study. It may differ radically from one society or one ethnic group or one socioeconomic stratum to another. A good example of the variation of such pregnancy rates from one group to another is the experience with the thermometer (rhythm) method, which has been employed with nearly perfect effectiveness in certain samples of highly-educated Western users but with nearly total lack of effectiveness among some less-educated, less-motivated groups in other parts of the world.

The first-method pregnancy rates for the Philippines, based on the NAS data are given in Table 8. It can be seen that the rates for pills and the IUD were very low and approximately equal. This finding is particularly interesting in light of the fact that many doctors promote pills as the more effective of the two methods. The basis for this allegation is the finding from clinical tests that under conditions of perfect use the pills provide virtually 100 percent protection, whereas the IUD (loop) users ordinarily experience a failure rate of 2-5 percent per year. However, what is often overlooked is the fact that the pills can be used incorrectly, re-

Table 8

First-method failure rates and 95-percent confidence intervals, by first method accepted (NAS, 1972)

Month (m)	Number becoming pregnant by the end of month m while using first method (and confidence interval)				Number of cases beginning month m			
	Pills	IUD	Rhythm	Other	Pills	IUD	Rhythm	Other
1	1 (0.6-2.0)	1 (0.0-1.2)	5 (2.0-7.4)	3 (0.0-6.7)	1017	535	233	70
2	2 (0.9-2.5)	1 (0.0-1.4)	10 (5.5-13.5)	4 (0.0-9.5)	859	507	208	46
3	2 (0.9-2.7)	1 (0.0-1.5)	12 (6.3-16.9)	4 (0.0-10.5)	788	498	191	36
4	2 (0.8-2.8)	1 (0.0-1.5)	14 (7.8-20.0)	7 (0.0-15.5)	739	489	176	34
5	2 (0.8-2.8)	1 (0.1-2.1)	16 (9.2-23.0)	7 (0.0-17.2)	705	477	168	31
6	2 (1.0-3.0)	1 (0.0-2.2)	20 (12.3-27.9)	7 (0.0-17.2)	680	468	158	27
12	3 (1.6-4.8)	3 (1.0-5.4)	33 (21.4-45.4)	[12] (0.0-28.7)	542	405	105	14
18	4 (1.8-5.6)	4 (1.3-6.5)	38 (23.7-51.5)	[12] (0.0-28.7)	265	217	47	5
24	4 (1.9-6.3)	5 (1.3-7.7)	[39] (23.8-53.8)	-	64	66	7	0

^aBrackets denote less reliable rates, where the number of cases beginning the current month is less than 20. The hyphen denotes no cases beginning the current month.

sulting in an occasional accidental pregnancy. In the Philippines, the incidence of accidental pregnancies among pill users is so high that it places the pills on a par with the IUD as long as the method is in use.

The accidental pregnancy rates among rhythm users were, by comparison, extremely high. By the end of two years, the proportion may have increased to 39 percent; however, the reliability of this latter figure is low, since it is based on small numbers of cases completing the last few months of the second year. The accidental pregnancy rate among users of "other" methods was considerably lower than among rhythm users but three to four times higher than among pill and IUD users, depending on the time period.

The first-method pregnancy figures in Table 8 can be divided by corresponding first-method termination rates (one minus the first-method continuation rate) to yield the percentage of first-method terminations resulting from accidental pregnancy for any method and time period shown. The ratios for selected time periods are provided in Table 9. It can be seen that accidental pregnancies account for the smallest proportion of terminations among pill dropouts (about 6 percent) and for the largest proportion (about 60 percent) among rhythm dropouts. The proportions of IUD and other dropouts attributable to accidental pregnancy are a little higher than for pills (usually between 12 and 15 percent).

Overall postacceptance pregnancy rates. Though the first-method pregnancy rates indicate something about the intrinsic effectiveness of particular methods as practiced by Philippine women, they do not provide sufficient information about the long-term effect of accepting a method, since they do not take into account differences in continuation rates. A highly effective method used for only a few months on the average is no more effective in reducing fertility than a method of only moderate effectiveness that is used for several years. In the Philippines, the experience of pill and IUD acceptors illustrates this principle.

From Table 8, we know that the *accidental* pregnancy rates for the pills and the IUD were

Table 9

Percentage of first-method termination rates accounted for by accidental pregnancies, by first method (NAS, 1972)

Month	First method ^a			
	Pills	IUD	Rhythm	Other
6	6	7	57	12
12	6	13	61	[15]
18	7	14	64	[14]
24	6	14	[59]	—

^aNumbers in brackets are based on relatively unreliable continuation rates. A hyphen indicates insufficient data for computation.

about the same, and from Tables 1 and 3, we know that the continuation rates of IUD acceptors were higher than those of pill acceptors. The effect of the difference in continuation rates on the *overall* pregnancy rates of the two types of acceptors can be seen in Table 10 and Figure 3. During the first six months after acceptance, the pregnancy rate among pill acceptors was four times that of IUD acceptors. By the end of the first year the difference had narrowed so that the pill rate was twice the IUD rate, and it stayed at that level through the entire 24-month period covered by the NAS. After two years, over one-third of the pill acceptors had become pregnant, as compared to only one-sixth of the IUD acceptors. Thus, in the long run the IUD is far *more* effective than the pills (at least in the Philippine setting), despite the common notion to the contrary.

The pregnancy rates among rhythm and other acceptors are considerably higher than those of the pills. In fact, according to a recent analysis based on NAS data (Laing 1972), it is estimated that acceptance of the rhythm method as practiced by Philippine couples averts only one-fourth (26 percent) of the births that would have occurred if it had not been accepted and that the corresponding figure for acceptances of "other" methods is only 30 percent. On the other hand, the estimated fertility reduction among pill acceptors is about half (48 percent)

Table 10
Pregnancy rates and 95-percent confidence intervals,
by first method accepted (NAS, 1972)

Month (m)	Total number becoming pregnant by the end of month m (and confidence interval) ^a					Number of cases beginning month m			
	Pills	IUD	Rhythm	Other		Pills	IUD	Rhythm	Other
1	3 (1.6-3.4)	1 (0.0-1.2)	6 (3.5-9.3)	7 (1.5-12.7)		1012	532	234	70
2	5 (3.3-5.7)	1 (0.2-2.0)	13 (8.8-16.8)	10 (3.4-16.6)		980	529	218	65
3	7 (5.3-8.3)	2 (0.8-3.0)	15 (10.7-19.3)	11 (4.4-18.4)		955	526	200	63
4	9 (7.0-10.4)	2 (0.9-3.3)	18 (13.4-22.8)	17 (8.8-25.4)		929	520	193	62
5	10 (8.6-12.2)	2 (1.1-3.7)	21 (16.2-26.2)	17 (8.8-25.4)		907	517	185	57
6	12 (10.3-14.3)	3 (1.9-4.9)	26 (20.7-31.5)	17 (8.8-25.4)		885	514	176	56
12	22 (19.8-24.8)	10 (7.0-12.0)	43 (37.0-49.4)	32 (21.7-42.9)		752	469	128	45
18	30 (27.2-33.2)	14 (10.8-17.2)	49 (42.0-55.0)	[38] (26.7-50.1)		376	254	59	19
24	36 (32.5-40.3)	18 (13.9-21.9)	[50] (42.9-56.3)	[46] (30.1-61.3)		101	74	10	1

^aBrackets denote less reliable rates, where the number of cases beginning the current month is less than 20.

and among IUD acceptors three-fourths (74 percent). Thus, in terms of long-range demographic effectiveness it appears that an IUD insertion is 50 percent more effective than a pill acceptance and nearly three times as effective as an acceptance of rhythm or "other" methods.

The figures shown in Table 10 are cumulative, referring to all pregnancies during the intervals specified. Thus, the 12-month rate (R_1) is the rate for the first year, but the 24-month rate (R_2) is the rate for the first and second year combined. The rate for the second year alone (r_2) is of interest and can be readily obtained by the formula,

$$r_2 = (R_2 - R_1) / (1 - R_1).$$

On the basis of this formula it can be determined that the second-year pregnancy rates are as follows (shown for comparative purposes together with the first year rates).

Method	r_2	$r_1 (=R_1)$
Pills	18	22
IUD	9	10
Rhythm	(12)	43
Other	(21)	32

The second-year values present an interesting contrast to the first-year values. In all cases the pregnancy rate in the second year following acceptance is lower than the first-year rate, but the difference is especially dramatic for acceptors of the rhythm and "other" methods. Unfortunately, the second-year figures for these two method categories are based on small numbers of cases and therefore may be somewhat inaccurate (as indicated by the parentheses), but the magnitude of the differences, especially for rhythm, suggests that for those couples who are able to use them successfully for the first year, the long-term effectiveness of these methods beyond the first year approaches and may even exceed the long-term effectiveness of pills. Nevertheless, even in the second year no method appears to provide as much protection as the IUD with its 9 percent pregnancy rate.

Summary

On the basis of interviews conducted in

Table 11
Summary of 12-month and 24-month continuation and pregnancy rates (NAS, 1972)

Type of rate	Ordinal month	Method ^a			
		Pills	IUD	Rhythm	Other
First-method continuation rate	12	54	77	46	[21]
	24	36	63	[34]	—
All-method continuation rate	12	66	86	53	56
	24	50	73	[46]	—
First-method pregnancy rate	12	3	3	33	[12]
	24	4	5	[39]	—
All-method pregnancy rate	12	22	10	43	32
	24	36	18	[50]	[46]

^aBrackets denote rates of relatively low reliability. A hyphen indicates insufficient data for computation.

early 1972 among a probability sample of women reported as acceptors in Philippine family-planning clinics during 1970, continuation and pregnancy rates have been computed. These rates are presented for each method in the present report and are believed to be the best available use-effectiveness estimates for the Philippines to date. The 12-month and 24-month rates are summarized, by method, in Table 11.

Because of the high degree of variation in the method-specific rates, the rates for the program as a whole depend on the "mix" of methods being accepted. Allowing for differential over-reporting of acceptors by method (based on the NAS), it is estimated that presently about 60 percent of all bona fide acceptors select pills; 20 percent accept the IUD; 8 percent, rhythm; and 12 percent, other methods. Given this mix, the general program rates for 12 months are as follows:

First-method continuation rate	54
All-method continuation rate	68
First-method pregnancy rate	6
Overall pregnancy rate	22

Thus, under prevailing conditions, nearly half of the bona fide acceptors can be expected to terminate use of the first method within a year; about one-third stop using contraception of any sort within a year. Over one-fifth of all acceptors are likely to become pregnant within a year after acceptance, and about 30 percent of these

pregnancies occur while the first method is still in use.

Most acceptors who terminated use of the pills gave side effects and medical reasons as their primary reason. Side effects and medical reasons were also important determinants of IUD termination, but another important cause was involuntary expulsion. Most rhythm terminations were explained by accidental pregnancy. On the whole, side effects and pregnancy constituted the most important causes of termination of family-planning methods. However, terminations because of side effects or medical reasons were more likely to be a cause of method change than of final termination.

By almost every criterion, the IUD proved to be preferable to any other method. IUD acceptors had much higher continuation rates and much lower pregnancy rates than acceptors of other methods, and they were more likely to shift to other methods following termination and to select a highly effective method (pills) in doing so. It is apparent that IUD acceptors were more highly motivated than other acceptors, and this factor may account for some of the differences in use effectiveness. However, the intrinsic advantages of the IUD (such as the fact that it does not require sustained motivation and its low failure rate) also account for much of the difference, apart from differential motivation. Even when such motivational indicators as

desire for additional children or husband's behavior relating to family planning are held constant most of the contrast between pill and IUD use effectiveness measures remains.³

The fact that only about one acceptor in seven is reported to be an IUD acceptor suggests a lack of awareness among clinic personnel of the advantages of the IUD. The effectiveness of the program could be considerably improved if a larger proportion of acceptors were to choose the IUD. To this end a greater effort should be made to communicate the advantages of the IUD to both program personnel and potential clients and to give more credit for IUD acceptances of other methods in the assignment of targets and the evaluation of clinic and motivator performance. Conversely, the poor performance of methods other than pills and the IUD suggests the need for discouraging the promotion of such methods except in cases where more effective methods are contraindicated or otherwise inappropriate.

Notes

The author has since 1969 directed the Family Planning Evaluation Office of the University of the Philippines Population Institute, where he is concurrently a research associate and visiting lecturer. He received the Ph.D. in sociology from the University of Chicago in 1969.

1. If nonacceptors were treated as first-month dropouts in the computation of the Philippine figures reported in Table 1, the 24-month IUD continuation rate would be 60 and the 12-month pill rate would be 47.

2. However, in accordance with the conventions of use-effectiveness analysis, method changes are disregarded if a pregnancy intervened before the change occurred. Hence, the proportions computed in this manner are limited to changes that preceded the first pregnancy following acceptance.

3. Data supporting this assertion may be found in a companion paper, "Differentials in Philippine contraceptive continuation and pregnancy rates," forthcoming.

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