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Continuation and Effectiveness of Programme and Non-programme Methods of Family Planning in Sri Lanka * (Demographers' Notebook)

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The clinical efficacy of various contraceptive methods is well known. However, relatively little is known about their use-effectiveness (which refers to both technical failure of a method and the failure to use a method properly in actual life conditions, especially in developing countries). Use-effectiveness data for programme as well as non-programme methods are necessary for assessing the impact of contraceptive use on fertility (Bongaarts and Potter, 1983).

The objective of this paper is to examine continuation and effectiveness of contraception based on a 1986 survey of more than 3,200 women in rural Sri Lanka. Data on both programme and non-programme methods of contraception are analyzed. Programme methods are defined as including all those methods that are provided through the public or private family planning programmes (namely, oral pills, IUDs, injectables, condoms, female barrier methods and sterilization). Non-programme methods refer to those that are not provided through any structured programme; these methods include calendar rhythm (commonly referred to as "safe period" in Sri Lanka), withdrawal, abstinence and other traditional methods.

The use of non-programme methods was investigated in detail in the survey because, despite a "strong" family planning programme (Mauldin and Lapham, 1985), the use of non-programme methods of family planning is high in Sri Lanka (for details, see Caldwell and others, 1987). Of the currently married Sri Lankan women using contraception, the proportion using non-programme methods was 45 per cent in 1982 and 34 per cent in 1987 (table 1). As shown in table 1, the prevalence of safe period has remained stable during the period 1975-1987; much of the decline in the prevalence of non-programme methods reported in 1987 is confined to other traditional methods.

Table 1: Prevalence of programme and non-programme methods of contraception among currently married women aged 15-49, Sri Lanka: 1975, 1982 and 1987

Method	Per cent of:					
	Currently married women			Those currently using		
	1975	1982	1987	1975	1982	1987
Programme						
Female sterilization	9.9	18.0	24.7	28.8	31.1	40.0
Male sterilization	0.7	3.9	5.1	2.0	6.7	8.3
Pill	1.7	2.7	4.1	4.9	4.7	6.6
IUD	5.2	2.9	2.1	15.1	5.0	3.4
Condom	2.3	3.3	1.9	6.7	5.7	3.1
Injectable and barrier methods	0.4	1.0	2.7	1.2	1.7	4.4
Non-programme						
Rhythm/safe period	8.9	14.2	14.9	25.9	24.6	24.1
Withdrawal	1.6	5.1	3.4	4.7	8.8	5.5
Other traditional	3.7	6.7	2.8	10.8	11.6	4.5
All methods	34.4	57.8	61.7	100.1	99.9	99.9
Programme	20.2	31.8	40.6	58.7	54.9	65.8
Non-programme	14.2	26.0	21.1	41.3	45.1	34.2

Source: Adopted from DCS (1988: 58).

Note: Owing to civil disturbances in the country, the 1987 survey excluded northern and eastern provinces. Data from these provinces have been excluded from the 1975 and 1982 surveys in order to make these surveys comparable with the geographic areas covered by the 1987 survey.
Some percentages may not add to 100 because of rounding. For a discussion on the lower prevalence of non-programme methods in the 1975 survey, see Caldwell and others (1987).

Data and methodology

The data analyzed are from the Sri Lanka Rural Family Planning (RFP) Survey. This survey was conducted between August 1985 and February 1986. A two-stage stratified sample design with probability-proportionate-to-size techniques was used. Eligible respondents were defined as currently married women of reproductive age (<<44 years) at the time of the survey. A total of 3,253 interviews of women randomly selected from 30 villages were successfully completed.

The sample is not completely of rural Sri Lanka. Owing to political disturbances, some districts in the north-eastern part of the country were excluded. Further, the survey was limited to the Sinhalese population, which constitutes three-fourths of the total population in Sri Lanka. Nevertheless, the survey covered three of the six socio-economic and ecological zones and 17 of the 24 total districts in Sri Lanka.

Data on recent contraceptive practice were obtained from a "calendar" of monthly data on contraceptive practices, pregnancy status and reasons for non-use covering approximately three years preceding the survey. The calendar module proposed by Laing (1985) was employed for data collection. This approach allows collection of detailed contraceptive use history in a 36-month "window" of reproductive behaviour in the manner described below. This approach to the collection of contraceptive use data has been in use, with some variation, since the mid-1970s within national surveys in the United States of America.

First, pregnancies based on the pregnancy record form were recorded in the window of observation in addition to months of gestation for each pregnancy (including current pregnancy, if applicable). For each conception during the period covered by the calendar, the respondent was asked whether conception had occurred while she or her husband was using contraception and, if so, what method was being used. For each pregnancy, a further question was asked on whether it was a planned or unplanned pregnancy. The duration of post-partum amenorrhea for each pregnancy was recorded as well. Starting with the current month and working backward through time, the interviewer asked about contraceptive practice in each month and recorded the method(s). For each month of non-use (other than during gestation), respondents were further asked their reasons for non-use of family planning. The data obtained through the calendar module are used to estimate continuation rates, failure rates and contraceptive effectiveness.

Continuation rates

The monthly continuation rate (MCR) refers to the ratio of the total number of contraceptive users in two adjacent months to the total number of users in the first month. These rates are calculated using all pairs of adjacent months in the calendar. Monthly continuation rates can be converted to annual continuation rates (ACR) by: $ACR = 100\ (MCR)^{12}$.

Failure rates and pregnancy rates

The monthly failure rate (MFR) for a given method is estimated by dividing the number of conceptions that occurred during a month while the method was in use by the total number of non-amenorrheic users of that method during that month plus the number of conceptions. The monthly failure rates are converted to Pearl pregnancy rates (PPR) by: PPR = 1,200 (MFR). PPR indicates the number of failures occurring per 100 woman-years of use. Pearl pregnancy rates among non-users are calculated in the same manner as among users. The pregnancy rates among non-users are employed to estimate the fertility-reducing impact of contraception among the users.

Contraceptive effectiveness

Contraceptive effectiveness (CE) is defined as "the percentage by which the probability of conception is reduced as a result of contraceptive practice" (Laing, 1985: 141). This is expressed as: CE = 100 * (1-(PPR/EPR)) where EPR (expected pregnancy rate) is an estimate of the Pearl pregnancy rate that might have been expected in the absence of contraceptive practice. We use the PPR for non-users as the expected rate. The expected pregnancy rate is usually much higher than the Pearl rate among contraceptive users and may exceed 100. Since the Pearl rate is simply 12 times the monthly rate expressed as a percentage, a Pearl-type rate of 100 implies a monthly pregnancy rate of 8.3 per cent. Since estimates of natural fecundability range from 16 to 25 per cent (Bongaarts and Potter, 1983: 29), the theoretical upper limit of the expected pregnancy rate correspondingly ranges from 192 to 300. The methodology for data analysis is based on a "cross-sectional" approach, as distinct from a life-table-type methodology. Unlike the life-table methodology, the cross-sectional approach does not require data on duration of use following contraceptive acceptance. Most importantly, continuation and effectiveness data based on the cross-sectional approach rather than those obtained from the life-table methodology are recommended for assessing the demographic impact of contraceptive use (United Nations, 1988).

Continuation and pregnancy rates as well as contraceptive effectiveness by each contraceptive method used are estimated for the total sample. Additionally, variations by demographic and socio-economic characteristics are examined. The demographic variables included in the analysis are age, marital duration, parity and fertility preference. Socio-economic variables include education, occupation, wealth status and regional development level. The last two are composite variables. The index of wealth refers to the sum of several household amenities, where the presence of each of the following is counted as 1: availability of electricity, cement floor, tile/asbestos roof, brick or cement wall, permanent toilet, and tap water in the respondent's house. This index ranges from 0 to 7. Regional development index refers to the classification of the geographic zones, based on multiple socio-economic and ecological characteristics, as classified by the Sri Lanka Department of Census and Statistics (DCS, 1978: 17-54).

In this note, we focus on discussing contraceptive method-specific continuation and use-effectiveness rates. Pearl pregnancy and expected pregnancy rates for socio-economic characteristics are not shown because, as Laing (1985: 153) has pointed out, "... contraceptive effectiveness is a more plausible indicator of relative effectiveness than Pearl rates and should be used in preference to Pearl rates for studying effectiveness differentials".

Data quality

Data collected retrospectively are usually prone to reporting errors. Errors may come from failure to report the use of a method at all, or from the misplacement of events. For example, incorrect reporting of the use of contraception at the time of conception, an important piece of information required to estimate the contraceptive failure rates, may not be uncommon. In his study in the Philippines, Laing (1985) found that although the reporting of contraceptive use tended to be less reliable for the recent past at the individual level, it was reliable at the aggregate level. For the data collection methodology employed here, "the reliability of information for any given month is not very important, as long as the information on number of months of use and on contraceptive status at the time of conception are reasonably accurate" (Laing, 1985: 139). Laing also points out that the reliability of duration of use and use status at the time of conception are equally important for life-table analysis. Hence, the retrospective data collected for the calendar approach are not more likely to be subject to greater errors than estimates based on the application of life-table techniques. Recently, one study in Peru compared the quality of contraceptive use data collected through the calendar approach with data collected through the standard "tabular" approach and found the quality of the detailed contraceptive history data to be superior (Goldman, Moreno and Westoff, 1989).

As a check on data quality, we estimated contraceptive prevalence at three points in time using the 1986 RFP survey data and compared these estimates with those from the 1982 Sri Lanka Contraceptive Prevalence Survey (CPS) for the rural Sinhalese population. We found prevalence at the aggregate level, particularly for modern methods, to be consistent over time (table 2). For example, from 1982 to 1985 prevalence of IUD and the pill was 3-4 per cent, and withdrawal about 7 per cent. Apparent changes in prevalence for condom and safe period between 1982 and later dates are most probably due to the addition of the combination categories. It is likely that many women who said they were practising "safe period" or "other traditional" methods alone in 1982 were practising safe period combined with withdrawal (such combination methods were not ascertained in the CPS or earlier surveys) and indicated so in the 1986 survey. Similarly, the apparent drop in condom prevalence from 1982 to 1983 may be explained by the additional proportion of women using condoms combined with safe period in 1983 and later. The proportions of female and male sterilizations in 1983 appear to be low compared with the 1982 CPS data. This could be due largely to the fact that the 1982 CPS data are based on a period measure of contraceptive use, whereas estimates from 1983-1985 are based on cohort measures of contraceptive use. Overall, the prevalence data are fairly consistent. This indirect quality check lead us to conclude that these retrospectively collected data for Sri Lanka do not suffer from any substantial magnitude of underreporting or misreporting, at least at the aggregate level.

Table 2: Proportion of currently married, exposed (not pregnant) women using contraception, 1982-1985: rural Sinhalese women

Method	CPS	RFPS		
	1982 (March)	1983 (Feb.)	1984 (June)	1985 (Oct.)
Programme				
Female sterilization	19.9	20.6	27.2	31.3
Male sterilization	3.0	2.4	3.8	5.0
IUD	3.8	4.1	4.1	4.1
Pill	2.7	3.3	4.0	3.9
Condom	3.5	1.6	1.4	1.9
Other modern [a/]	1.0	0.6	0.8	1.2
Non-programme				
Safe period	15.2	9.9	8.9	9.3

Withdrawal	6.3	7.2	7.0	6.8
Other traditional	6.2	2.3	2.7	2.9
Combinations				
Safe period + withdrawal	n.a.	12.8	12.9	12.4
Safe period + condom	n.a.	1.6	1.7	1.6
Any method	61.6	66.4	74.5	80.3
No method	38.4	33.6	25.5	19.7

Notes: Data for 1982, based on the CPS, are restricted to Sinhalese women residing in those rural zones where the RFPS was conducted. Hence, the 1982 prevalence data represent approximately the same population as in the RFPS, which is the source for prevalence for 1983-1985 data shown in the table.
a/ Includes female barrier methods, injectables and induced abortion.
CPS = Contraceptive Prevalence Survey; RFPS = Rural Family Planning Survey;
n.a. = not available.

Results

The results regarding continuation and effectiveness of programme and non-programme methods of family planning for the total sample are presented in table 3. Besides sterilization, the highest annual continuation rates (ACR) were for the IUD. The lowest rates were for condoms, withdrawal, abstinence and other traditional methods. In general, modern methods had a wider range in ACRs (100 for female sterilization to 32 for condoms) than traditional methods (50 for safe period to 38 for withdrawal). Users of safe period in combination with condoms had ACRs approximately equal to those who used safe period alone but much higher than users of condoms only. Women who used safe period combined with withdrawal had higher ACRs than women who used safe period alone and substantially higher ACRs than users of withdrawal alone. In fact, combined safe period-plus-withdrawal users' continuation rates were nearly as high as or higher than continuation rates for three modern methods including injectables and the pill.

Table 3: Annual continuation rates, Pearl pregnancy rates (PPR), expected Pearl-type pregnancy rate (EPR), and contraceptive effectiveness (CE) by contraceptive method: rural Sri Lanka

Method	Continuation rate (woman-months)	Annual continuation rate	Pearl pregnancy rate	Expected pregnancy rate	Contraceptive effectiveness
Programme					
Female sterilization	25,573	100	<1	74	100
Male sterilization	3,632	98	1	80	97
IUD	3,977	83	2	83	98
Pill	3,519	54	8	104	93
Condom	1,384	32	13	91	86
Injectables	803	59	5	108	96
Non-programme					
Safe period	8,949	50	32	85	62
Withdrawal	6,729	38	34	92	63
Abstinence	842	41	0	60	100
Other	1,718	43	20	83	75
Combination					
Safe period + condom	1,477	49	8	82	90
Safe period + withdrawal	12,391	57	23	85	73
Any method	70,974	81	13	82	85

The pattern of contraceptive effectiveness estimates was roughly similar to the pattern of ACRs. Modern methods had the highest CEs, traditional methods the lowest, and safe period combination methods improved upon safe period used alone. When used alone, safe period had the lowest CE of any method. When used in combination, safe period CE increased from 62 to 73 with withdrawal and to 90 with condoms — a level nearly as high as most modern methods. Withdrawal CE increased from 63 to 73 when combined with safe period, and condom CE increased from 86 to 90 when combined with safe period — a level nearly as high as most modern methods.

Socio-demographic differentials

Table 4: Annual continuation rates (ACRs) and contraceptive effectiveness (CE) for all methods used by selected demographic and socio-economic characteristics: rural Sri Lanka

Variable	Continuation rate (woman-months)	Annual continuation rate		Contraceptive effectiveness	
		Including sterilization	Excluding sterilization	Including sterilization	Excluding sterilization
Age group at mid-survey period					
15-19	1,104	53	50	68	67
20-24	8,590	65	57	79	74
25-29	14,664	74	61	82	74
30-34	19,292	84	71	88	78
35-39	18,992	90	78	90	80
40-44	8,370	91	82	89	79
Marital duration (years)					
Fewer than 5	6,272	56	54	68	66
5-9	20,596	73	63	83	77
10-14	18,228	86	73	87	77
15-19	13,872	91	78	92	80
20 or more	12,044	94	85	90	77
Total number of living children					
0	355	(68)	(63)	(56)	(46)
1	6,768	74	72	86	86
2	16,660	75	68	88	84
3	18,312	81	67	88	79
4	12,988	85	68	91	80
5 or more	15,932	87	69	90	75
Women's education (years)					
None	5,542	85	71	86	73
1-5	24,096	83	67	87	75
6-9	23,076	79	66	86	77
10 or more	18,296	80	71	88	84
Woman's work status					
Income earning					
Regular salaried	7,107	83	72	89	83
Casual wage	7,466	89	77	90	79
Home-based/cottage	5,268	85	73	88	78
No direct earning					
Domestic/farm	51,176	79	66	86	78
Husband's education (years)					
None	2,686	83	66	81	61

1-5	22,972	82	66	85	72
6-9	27,364	82	69	88	80
10 or more	17,480	79	71	88	83
Husband's occupation					
Farmer	24,000	81	68	83	71
Agricultural labourer	5,021	84	62	92	78
Skilled non-agricultural labourer	13,192	81	69	90	83
Unskilled non-agricultural labourer	10,822	82	67	88	79
Teacher/office worker	8,282	81	74	89	86
Own business	5,113	78	65	87	80
Other	4,574	78	67	87	81
Couple's education (years)					
None	883	88	-	87	-
1-5	15,590	83	67	86	72
6-9	11,654	79	67	87	78
10 or more	10,962	79	71	88	84
Wife less than husband	17,004	82	70	88	80
Wife more than husband	14,408	81	68	87	78
Couple's occupation					
Domestic	16,644	78	65	82	71
Non-domestic	10,304	85	75	90	84
Wife domestic, husband non-domestic	31,676	79	67	88	81
Wife non-domestic, husband domestic	7,356	88	76	86	73
Couple's wealth status					
Low	27,096	80	64	85	74
Middle	37,560	82	70	88	80
High	6,357	81	73	89	84
Regional development level					
Low	19,980	79	67	83	75
Middle	28,396	84	67	87	73
High	22,636	80	71	89	84

Estimates of socio-economic and demographic differentials of contraceptive use and effectiveness (for all methods) are presented in table 4. We have indicated relatively unreliable estimates based on fewer than 600 woman-months by putting them within parentheses; these estimates are based on a small number of cases (50 or fewer) or a short duration of observation. Therefore, they should be interpreted with caution. Since nearly 40 per cent of the total number of persons practising contraception in this study were users of sterilization, which has predictable effects on contraceptive continuation and effectiveness estimates, we repeated the socio-demographic and fertility preference analyses, excluding sterilization cases, to ascertain how sterilization contributed to the results.

Continuation rates were positively associated with age and ranged from 53 for women under age 20 to 91 for women in their forties. This pattern may be due partly to more older women having been sterilized. Another reason could be that more older women are more motivated to use contraception diligently. As expected, the estimates of CE were low among women under age 20, moderate among women in their twenties, and relatively high among women over age 30.

ACR was also positively associated with marital duration. Women married for fewer than five years had an ACR of 56 while the ACR was 94 among women married 20 or more years. In terms of contraceptive effectiveness, marital duration discriminated between three groups of women: those married fewer than five years had low CE, those married 5-14 years had moderate CE, and those married 15 or more years had relatively high CE.

ACRs and CE were low among women with no living children and progressively higher among women with greater numbers of children. ACR increased monotonically with number of living children, reflecting the tendency for women with more children to use contraception more assiduously. Effectiveness rates, though less pronounced, reflected the same pattern.

The patterns of CE estimates by age, marital duration and number of living children were consistent and fairly strong. An interesting feature of the pattern was the apparent slight drop in CE among women in the terminal category of the three variables. This might be due to some older women thinking they are not fecund and therefore using less effective methods of contraception. At the same time, the results may also reflect selectivity. Older women who are especially concerned about stopping child-bearing often opt for sterilization, effectively shifting the rates for the upper age and marital duration categories towards those typical of sterilization. Higher educational attainment and work status are generally assumed to be associated with contraceptive adoption, continuation and efficacy (cf. Laing, 1985). In Sri Lanka, CE bore little relationship to these characteristics and ACRs showed weak and irregular patterns.

Contraceptive continuation was highest among women with no education. This finding is probably a reflection of the likelihood that women with no education tend to be older and higher parity and thus, more determined to stop or limit child-bearing. Continuation was also highest among casual wage labourers, though the differentials were not very great among income-earning women. Domestic/farm workers with no direct income had the lowest ACR. Effectiveness estimates among educational groups and work status groups did not vary greatly.

Few ACR and CE patterns emerged with respect to husbands' education and occupation. Wives of husbands with 10 or more years of education, like the women themselves, had the highest CE (88) but also had the lowest ACR (79). Effectiveness was positively associated with husbands' education. Husbands classified as agricultural labourers had the highest ACR and CE, whereas farmers had the lowest CE.

When taken jointly, husbands' and wives' education showed little relationship to contraceptive continuation and effectiveness. Couples in which both husband and wife had fewer than six years of education had the highest ACR (88). Conversely, couples in which both husband and wife had six or more years of education had the lowest ACR (79). Whether the husband or the wife had more education made no difference in continuation, and effectiveness did not vary with respect to the couples' education.

The finding that CE did not vary by couple's education while ACR did suggests that, although more poorly educated couples might have been more diligent in their contraceptive efforts, the results of their efforts were no better than the efforts of less diligent, highly educated couples.

Continuation was low among couples in which both husband and wife were domestic workers and among couples where the wife did domestic work and the husband was a non-domestic worker. On the other hand, the ACR was high among couples in which both partners were non-domestic workers and among couples where the wife had a non-domestic occupation and the husband did domestic work. On the whole, the ACR was relatively low if the wife had some kind of domestic occupation and was relatively high when the wife did non-domestic work. Couples in which both husband and wife were domestic workers had considerably lower CE (82) than when both husband and wife were non-domestic workers (CE=90).

To examine whether couples with better economic status or those living in relatively more advanced areas were more likely to adopt and continue to practise more effective contraception, we examined couples' wealth status and regional development levels. ACRs were lowest both among couples with low wealth status and where regional development was low, and highest among couples with moderate wealth status and in places where regional development was moderate. However, the differences were not very great. Similarly, CE was positively associated with wealth status and regional development, though again, the differences were not great.

Fertility preference differentials

Table 5: Annual continuation rates (ACRs) and contraceptive effectiveness (CE) by fertility preference measures: rural Sri Lanka

Characteristic	Continuation rate (women-months)	Annual continuation rate	Contraceptive effectiveness
Whether desires more children [a/]			
Yes	15,512	69	76
No	21,880	76	84
Not decided	439	(66)	(88)
Intensity of desire for more children [a/, b/]			
Not very strong	8,800	70	87

Strong	4,506	67	73
Very strong	2,407	68	49
Number of additional children desired			
0	55,176	85	91
1	11,904	69	81
2	3,316	72	74
3 or more	455	(63)	(59)
Desired delay to next child (months)			
No more children	55,176	85	91
Less than 25	5,941	80	84
25-48	5,273	65	83
49 or more	4,625	60	63

Notes: a/ Excluding sterilized respondents.
b/ Excluding women who do not desire more children.

Fertility preferences were associated with contraceptive behaviour. Women who said they desired more children did not continue contraceptive practice, and they tended to be less efficacious when they did practise contraception (table 5). The intensity of the desire for more children showed a strong relationship with CE, but ACRs did not vary greatly. In essence, the prevailing pattern with respect to both desire and strength of desire for additional children was as expected, i.e., the stronger the desire for more children, the less effective was the woman's contraceptive practice.

As expected, the number of additional children desired correlated negatively with ACR and CE. The average ACR was very low (63) for women desiring three or more additional children and relatively high (85) among women desiring no more children. CE was inversely associated with the number of additional children desired, ranging from a high ACR of 91 among women desiring no more children to a low of 59 among women desiring three or more children. This pattern holds even when the unreliable estimate for women desiring three or more children is ignored.

The desired spacing between the last child and next child exhibited unexpected patterns with respect to ACR and CE. Women who desired the longest delay to the next child (more than 48 months) had the lowest ACR (60) and CE (63). Women who desired their next child within the next 25 months had the highest ACR and CE among women desiring more children. This finding may reflect a tendency among higher parity women (who desire fewer additional children as well as a longer delay to the next child) to be less efficacious at practising contraception.

The results in table 4 clearly show that the patterns of association which emerge for variables are in large part due to the pattern of sterilization effects. Absolute differences in ACR and CE between all respondents and non-sterilized respondents increase with woman's age, marital duration and number of living children and differences decrease as all three education variables increase. These findings indicate that sterilization acts to reduce fertility relatively more among older, less-educated, higher parity women, and almost exclusively among women desiring no more children.

Summary and conclusions

This paper analyzed the continuation and effectiveness of programme and non-programme methods of contraception among rural women in Sri Lanka. The results with regard to contraceptive failure support the notion that real life condition failure rates, particularly for modern temporary methods, tend to be substantially higher than reported rates based on clinical studies. Estimates of ACR and CE were positively associated with demographic variables such as age, marital duration and number of living children. However, relationships with socio-economic status indicators were generally weak. Furthermore, contraceptive continuation and effectiveness were higher for couples with lower levels of educational attainment. These patterns of findings appear basically consistent with those found for the Philippines (Laing, 1985). Overall, it was found that the use of safe period in conjunction with either withdrawal or condoms had considerably higher effectiveness than when practised alone. These results also showed that ACRs were much higher for condoms and withdrawal when used together with safe period than when used alone. These results and other findings (Laing, 1985) suggest that the impact of non-programme methods on fertility, in the long-run, may be more substantial than previously realized. The findings seem to support the thesis forwarded by Caldwell and others (1987) that the practice of non-programme methods of family planning has probably played a significant role in Sri Lanka's fertility transition. Since combined methods seem to have a remarkably high contraceptive effectiveness, family planning programmes may do well to promote the use of the safe period method in combination with condoms or withdrawal for those who do not want to use other spacing methods of contraception.

References

Bongaarts, J. and R. Potter (1983). *Fertility, Biology and Behavior: An Analysis of the Proximate Determinants* (New York, Academic Press).

Caldwell, J., K.H.W. Gaminiratne, P. Caldwell, S. de Silva, B. Caldwell, N. Weeraratne, and P. Silva (1987). "The role of traditional fertlity regulation in Sri Lanka", *Studies in Family Planning* 18(1), 1-21.

Department of Census and Statistics (DCS) (1988). *Sri Lanka Demographic and Health Survey 1987* (Colombo, Ministry of Plan Implementation).

_____ (1978). *World Fertility Survey, Sri Lanka 1975, First Report* (Colombo, Ministry of Plan Implementation).

Goldman, N.L. Moreno and C. Westoff (1989). "Collection of survey data on contraception: an evaluation of an experiment in Peru", *Studies in Family Planning* 20(3), 147-157.

Laing, J. (1985). "Continuation and effectiveness of contraceptive practice: a cross-sectional approach", *Studies in Family Planning*, 16, 138-153.

Mauldin, W.P and R.J. Lapham (1985). "Measuring family planning programme efforts in LDCs: 1972 and 1982", in: N. Birdsall (ed.), *The Effects of Family Planning Programs on Fertility in the Developing World*. World Bank Staff Working Paper No. 677 (Washington, DC, World Bank), 1-40.

United Nations (1988). Summary report and recommendations of the United Nations Expert Group Meeting on Methodologies for Measuring Contraceptive Use Dynamics. Unpublished draft (New York, Population Division, United Nations).
