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CONTRACEPTIVE METHOD CHANGE AMONG RURAL SRI LANKAN WOMEN

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Summary. Patterns of contraceptive method change and their association with reproductive motivation and contraceptive failure are examined using data from a 1986 survey of family planning behaviour of rural Sinhalese married women aged 15 44 in seventeen districts of Sri Lanka. A notable degree of rationality in contraceptive method changes occurs with family formation. The attempt to control unwanted fertility leads to more efficacious use of contraception, including traditional methods. Some methodological improvements to the analysis of contraceptive switching are indicated. Implications of the findings for programmatic emphasis on permanent versus non-permanent modern methods are discussed.

Introduction

The determinants of modern contraceptive behaviour in the Third World are of obvious practical significance for organized family planning efforts and remain a prominent research issue for social demography. A couple's habitual use of contraception, through sequential experience with different methods over time, however, is much less studied even though recent Third World trends at the national level suggest that sufficient change has probably occurred to support such investigations at the individual level (London *et al.*, 1985; United Nations, 1986a). Examinations of contraceptive method change in developing countries are needed to document their existence, characterize their nature, trace their patterns, and evaluate their implications for fertility levels.

The study of contraceptive method change, has predominantly been focused on patterns in the United States (Pratt & Bachrach, 1987; Grady *et al.*, 1989; Westoff & Jones, 1979), less so on issues pertinent to the Third World (DaVanzo *et al.*, 1989). Here the nature and incidence of various patterns of method change are examined, together with their association with two key factors—fertility motivation and method failure—in Sri Lanka. An additional concern is method changes involving indigenous practices of rhythm and withdrawal (Caldwell *et al.*, 1987). The findings carry implications for the role and quality of family planning programme services in Sri Lanka.

Significance of contraceptive method change

The significance of contraceptive method change can be seen at two levels. First, at the aggregate level, changes in the composition of methods used can reflect broad changes in the availability of existing methods and the introduction of new contraceptive techniques. (Westoff & Jones, 1979). A prime example has been the availability of contraceptive sterilization, the method replacing traditional and temporary modern contraceptive use for many women in the US and the developing world (Bulatao, Palmore & Ward, 1989; Rindfuss *et al.*, 1989). Even legal constraints in Brazil (Janowitz *et al.*, 1985) have not fully inhibited its use, despite the requirement that women undergo caesarean section deliveries to qualify for the procedure. The potential introduction of other new contraceptive methods, such as the menstrual-regulating method RU-486, not only modify contraceptive choices of users but also have an important fertility effect by reducing levels of unwanted fertility (Westoff, Hammerslough & Paul, 1987).

Second, at the individual level, changes in the methods a couple use over their reproductive years reflect their fertility control decisions in relation to family size and their personal satisfaction with the methods' and their own use-effectiveness. For the Third World, improved access to contraceptive sterilization has facilitated its addition as a final method choice in many individual histories of fertility control. Especially if traditional contraception is used at the start of contraceptive practice, then the switch to sterilization directly or indirectly through use of temporary modern methods becomes a significant behavioural change.

Studies of individual method change will also consider whether the woman is particularly active or not in exercising control of her fertility over time, how method choices are made in and outside the marital context, and whether contraceptive method switches mean improved levels of use-effectiveness. Such studies will yield information on women's progressive ability to control their reproduction in accordance with their family formation objectives.

Contraceptive practice in Sri Lanka

Over the past decade, Sri Lanka has shown substantial increases in contraceptive prevalence. Between 1975 and 1987 the proportion of currently married women aged 15–49 using contraception almost doubled, from 32% to 62% (Sri Lanka Department of Census and Statistics, 1983, 1987). In terms of the methods being used, two modes appear prominent. In 1975, 20% of all users were using traditional methods, primarily rhythm and withdrawal (although see Caldwell *et al.*, 1987), while slightly more than half of users of modern methods were sterilized. Preliminary results from the 1987 Demographic and Health Survey show that almost half of all users of contraception had chosen sterilization while 35% used traditional methods.

The contrast in the permanence of fertility control afforded by sterilization and traditional contraception makes their relative positions of dominance unique. As in many other developing countries, contraceptive sterilizations are primarily obtained through public sources. Moreover, relatively little use of temporary modern methods is evident in Sri Lanka, raising the question of how the choice of permanent surgical contraception may be made in relation to customary practices of the safe period

(rhythm) and withdrawal. Relative to their desires to space or limit births, does traditional method practice precede the use of sterilization at all for couples?

Sri Lanka, with a population of about 16 million in 1985 and an estimated total fertility rate of 2·8 in the mid-1980s (Sri Lanka Department of Census and Statistics, 1987), has a long history of family planning commitment (Gendell, 1985; United Nations, 1986b). The provision of family planning services came initially through the Sri Lanka Family Planning Association in the early 1950s. Subsequently public provision of contraceptive services became available from a bureau established in the Ministry of Health. There has been a continuous flow of international donor assistance funds into programme activities, notably from the United Nations Fund for Population Activities since 1973. A commitment to reducing population growth in 1977 led to vigorous efforts to promote contraceptive practice, in particular, through the voluntary adoption of sterilization. Results from the 1982 Contraceptive Prevalence Survey suggested that four out of five current contraceptive users were supplied by a government source (Sri Lanka Department of Census and Statistics, 1983) and that almost half of current users had used another method in the past, a proportion slightly higher if a modern rather than a traditional method was currently used.

Although little research on contraceptive switching in developing countries is available, Kane, Gaminiratne & Stephens (1988) recently studied this behaviour for Sri Lanka. The similarities between the present findings and theirs are many, which is encouraging for the appropriateness of the analytical approaches, but it may also reflect the common use of survey data and overlapping periods of observation. The two studies differ in two respects. First, the underlying data to measure contraceptive change are different (see below). Second, this study does not enquire into (nor have data available on) reasons for terminating each episode of method use; instead the incidence of pregnancy and periods of non-use, and their relationship to patterns of method change over a period of time are examined.

The objectives are (1) to describe the patterns of method change and their prevalence and (2) to examine their association with individual motives to use contraception and with contraceptive failure, this being particularly relevant for considerations of improvements to quality of services.

Data and methods

The data come from interviews with a sample of 3253 currently married women of reproductive age 15–44 during the Rural Family Planning Survey (RFPS). The survey was conducted from August 1985 to February 1986 by the Family Planning Association of Sri Lanka with assistance from Family Health International. The sample design was a two-stage stratified sample using probability proportionate to size. A total of 3253 interviews of women randomly sampled within villages was successfully completed. The results are based on usable data for 2999 women married continuously for 3 or more years.

The sample is not completely representative of rural Sri Lanka. Because of political disturbances, it was decided to exclude some districts in the north-eastern part of the country. Also, the survey was limited to the Sinhalese population, which

constitutes 75% of the total population in Sri Lanka. The sample covered three of the six socioeconomic and ecological zones and seventeen of the 24 districts in Sri Lanka. Because of the controls on ethnic character and rural location, there is considerable homogeneity in sample composition. This has the disadvantage of mitigating socioeconomic differentials in patterns of contraceptive method change but increases the significance of any variation found.

The data were obtained from monthly data on contraceptive practices, pregnancy status, and reasons for non-use covering approximately 3 years preceding the survey, collected by the calendar module of Laing (1985).

First, pregnancies and months of gestation for each of them (including the current one) were recorded in the pregnancy record form for the 36-month period of observation. For each conception during this period, the respondent was asked whether it had occurred while she was using contraception and, if so, what method she was using. Then the duration of postpartum amenorrhoea for each pregnancy was recorded.

Starting with the current month and working retrospectively, 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 asked the reasons for non-use of family planning methods. The first method ever used was also ascertained. It is probable that non-use segments include unreported induced abortions or lactational amenorrhoea. Abortion cannot be included in the analysis but the extent of post-partum periods of amenorrhoea between method changes are examined. These data are uniquely suited to examining changes in rural Sinhalese contraceptive use in the most recent 3 years of reproductive behaviour. By focusing on this period, the present analysis differs from the study of Kane *et al.* (1988), which traces differences in the first, next to last, and most recent methods used.

Results

The Rural Family Planning Survey records thirteen different categories of method use (including non-use), as shown in Table 1, which also gives the proportions of rural married women aged 15–44 currently using each method. The dominant modes of contraception are sterilization (23% for female and 3% for male procedures) and traditional methods (11% for safe period and withdrawal, 8% safe period, and 6% withdrawal). The close comparability of these contraceptive prevalence values with those from the rural sample of the 1987 Demographic and Health Survey (Sri Lanka Department of Census and Statistics, 1987) serves as a check on the quality of the monthly retrospective calendar data. The reported methods are combined into four categories (Table 1), which represent a hypothesized ordinal ranking of method effectiveness—traditional, modern temporary, modern intermediate, and modern permanent. All modern methods are provided by various public and private organizations in the country.

Contraceptive method change between the first type of method reported used in the 36-month period and the method reported as the first ever used (Table 2) provides a crude starting point for observing method change. Having a truncated contraceptive history for each woman leads to uncertainty about the nature of this

Table 1. Categories of contraceptive methods* reported in the Rural Family Planning Survey and aggregations used in the analysis of switching

Code	Aggregation	Methods	% currently using†
		No method	36
1	Traditional	Safe period (rhythm)	8
		Withdrawal	6
		Abstinence	1
		Safe period and withdrawal	11
		Other traditional	2
	Modern		
2	Temporary	Pill	3
		Condom	1
		Condom and safe period	1
3	Intermediate	IUD	4
		Injection	1
4	Permanent	Tubectomy	23
		Vasectomy	3
		Total	100

* Less common combinations of methods were included in the category of their most effective single method.

† Among currently married, non-pregnant, non-amenorrhoeic women aged 15–44.

shift. The date when contraception first began is not known; it is possible that the first method used in the 36-month observation period is the first method ever practised, in which case these women will not have changed methods at all. Alternatively, a woman could have changed methods between the first used and the first recorded in the 36-month period. Since the method classifications are broad, it is also possible for a woman to switch methods within a category even though she never switches categories.

With these reservations, it seems that an overwhelming majority of women practise contraception for the first time with a traditional method, for example, safe period, withdrawal, or abstinence (Table 2). Another tenth initiate contraception with a sterilization method. Slightly less than a quarter of those who initially used traditional methods have switched to sterilization, similar to the proportions for women beginning with temporary or intermediate modern methods. Continued use of traditional methods is strong, as is the abandonment of modern non-sterilization methods in favour of either traditional methods or sterilization.

How does one define a method shift? When the measured level of activity is high, as it is when solicited by a calendar and in a cultural environment supportive of indigenous fertility regulation, tracing specific method changes and sequences can quickly become impracticable. A first information-reduction effort here was to use

Table 2. Percentage distribution of type of first method observed in 3-year period by type of first method ever used

First method ever used	Total	First method used in 3-year period			
		Traditional	Pill/condom	IUD/injectable	Sterilization
Traditional					
%	100	65	5	5	22
N	1979	1335	93	106	445
Pill/condom					
%	100	25	36	10	25
N	358	95	134	36	93
IUD/injectable					
%	100	26	6	36	26
N	193	53	13	74	53
Sterilization					
%	100				100
N	212				212
Total					
%	100	54	9	8	29
N	2742	1483	240	216	803

N = number of women; rows sum to 100%.

broad categories of method type. Specific method switches, such as from safe period to condom, are of less concern than change in method type, where the type signifies programme sponsorship and possibly varied levels of contraceptive use-effectiveness.

A second issue arises—whether to treat non-use as a legitimate state of contraception, which here it has been decided not to do. This approach would mean studying discontinuation which is itself a major effort. Moreover, it is difficult to know with certainty when non-use is because of subfecundity, for example, amenorrhoea or lactation-induced, or being sexually inactive. Contraceptive method switching is therefore defined as occurring when a woman begins using a method type which differs from the one she had most recently used. Detailed consideration of a 3-year period differs from the study by DaVanzo *et al.* (1989) who analyses method change between pregnancies and Kane *et al.* (1988) who uses reported change across first, penultimate, and current method used. These three perspectives emphasise the need for further consideration of the substantive and measurement issues behind contraceptive method change.

Patterns of method change

Based on sequential changes among method types used over the 36-month period preceding the survey date, 45 different patterns can be documented (Appendix Table A). A method segment represents the interval of time between initiating use of

one method type and changing to another method type, or the end of the study period. For example, a pattern of 2124 denotes four method segments: the use of method type 4, preceded by three intervals of use of method types 2, 1, and then 2 again. It does not necessarily mean continuous use over this period, since pregnancy and periods of non-use can occur. Of the method switching patterns, four involve use of only one method type, and nine involve only two method types. Results in Appendix Table A are summarized in Table 3. In terms of movement between method types, there is strong adherence to the method type used in this period. Of those practising

Table 3. Summary of observed method changes in 3-year period

80·9% of observed method use patterns involve use of only one distinct method type:

	%
1. Traditional	41·5
2. Temporary modern	6·0
3. Intermediate modern	4·1
4. Permanent modern	29·3

45 different patterns of method use are observed:

No. of method segments involved	*N*	%
1	2221	81·0
2	413	15·0
3	69	2·5
4	25	0·9
5	7	0·3
6	4	0·1
7	3	0·1
8	1	0·0

Average 1·26

Of sequences involving two distinct methods, over half involve sterilization as final method:

Sequence	*N*	% of all users (*N* = 2745)	% of 2-method switches (*N* = 413)
1→4	167	6·1	40·4
1→2	65	2·4	15·7
2→1	55	2·0	13·3
1→3	40	1·5	9·7
2→4	30	1·1	7·3
3→4	22	0·8	5·3
3→1	19	0·7	4·6
All others	15	0·5	3·6

Source: Appendix Table A.

contraception, 81% did not change their type of method during the 3 years. Among the contraceptive users, 42% used only traditional methods; the 29% adopting sterilization would not be eligible for a change. The remaining 10% used modern non-sterilization methods, predominantly the pill or IUD.

The remaining 19% of contraceptive users showed 41 different switching patterns, but 75% of them (413 women) involved only a single change in method type. A much smaller number (69) changed method types twice in this period. A second main finding is that, among those switching only once, over half (219 women) switched to sterilization. Of these 219 women, 167 (76%) were traditional method users first. The significance of this pattern is in part because of the dramatic difference in the nature of the fertility control and in part because much less switching to non-permanent modern contraceptives occurred than expected.

In Table 4 the adopters of traditional methods are examined closely in terms of the specific methods to which they next switched. Of current contraception among the rural Sinhalese women in this sample, 20% is by traditional methods, especially safe period (rhythm), withdrawal, and their combined use (Table 1). Table 4 shows that 18% of the 562 women beginning with traditional contraception shifted to the pill (10%) or condom (8%), 4% each to IUD or injectables, and 27% to female and male sterilization. However, almost half (46%) remained users of traditional methods, most of which involved the combined use of safe period and withdrawal. Table 4 shows that considerable switching is reported to occur among the various traditional methods. Because traditional methods may be frequently used in combination, one must be careful in labelling all such method shifts as switches. A detailed study, using non-survey data, of traditional practices of birth control in relation to sexual activity over the menstrual cycle is warranted to delimit specific episodes of traditional method use in Sri Lanka.

Table 4. Percentage distribution of women's next method used by first traditional method observed in use during 3-year period

First method	*N*	Next method: Other traditional: SP	W	A	SP/W	OT	Total	Modern temporary*	Permanent†
SP	144		10	5	9	1	25	35	41
W	205	8		4	44	2	58	25	16
A	26	15	19		35	4	73	12	16
SP/W	153	14	28	4		1	47	22	32
OT	34	9	9	3	29		50	26	27
Total	562	8	12	4	22	2	48	26	27

SP = safe period, W = withdrawal, A = abstinence, SP/W = safe period & withdrawal, OT = other traditional.

* Pill, condom (including combined use of rhythm), IUD, and injection.

† Female and male sterilization.

Intervening events

Kane *et al.* (1988) explored reasons for choosing a particular method as well as for discontinuing one. They found that women frequently report the need for a non-permanent as well as a convenient method. Fear of side effects is a common reason for discontinuing temporary modern methods. This psychological aspect is not included as a variable in the present study. To relate method change to the demand for birth-spacing, the occurrence of pregnancy and non-use, which can intervene between methods adopted, is examined. They can occur more than once, and therefore their sequence is recorded. Attention is restricted to the 413 women who switched only once during the 3-year period. Information is unavailable for the period between the first method ever used and the first method observed in the 3-year study period, and the numbers of women switching more than once during that period are too small to analyse. The occurrence and sequence of these events give the behavioural structure that underlies the reasons most commonly given for adopting or discontinuing contraceptive methods.

Table 5 shows that somewhat less than half of the switches between two method types were direct, with no intervening event such as a pregnancy. Direct switches were most common for movement from temporary or intermediate modern methods to

Table 5. Events among methods for women using exactly two distinct methods during the 3-year period

Sequence	*N*	% of women	% distribution* of intervening event sequences†					
			O	AP	APN	NP	NPN	Other
12	65	16	55	26	9	6	3	
13	40	10	65	13	15	8		
14	167	40	20	54	3	19	2	1
21	55	13	84	7	4	2	4	
23	8	2	50	25		13	13	
24	30	7	37	23	3	37		
31	19	5	79			5	5	10
32	7	2	86	14				
34	22	5	55	23		23		
Total	413	100	46	33	5	14	2	1

* Rows sum to 100.

† Intervening events are those occurring between the last use of the first method type and the first use of the second method type.

O = direct switch to second method with no intervening event;
AP = pregnancy conceived in a month when contraception was used;
APN = accidental pregnancy followed by period of non-use (but woman was not amenorrhoeic);
NP = non-use period preceded a (planned) pregnancy;
NPN = non-use periods adjoin a (planned) pregnancy;
Other = rare sequences such as NPNP.

traditional ones (sequence pattern 2→1 and 3→1) or from the IUD/injectable to pill/condom set (3→2). Accidental pregnancies were likely to precipitate a move to sterilization, especially for those first using a traditional method (54%). For women switching from modern methods, the proportion with method failure was 25%. Similar levels of accidental pregnancies are found for the sequences 1→2 and 2→3. It appears that the eventual switch to a more effective method type is precipitated by method failure with the previous type.

At the same time, however, planned pregnancies (those preceded by a period of non-use while at risk) also occur frequently before the shift to sterilization—37%, 23% and 19% for women with sequences 2→4, 3→4, and 1→4. Relatively few women experience sequences of more than two intervening events, such as non-use periods before and after a planned pregnancy.

Direct switching thus appears to be associated with a deterioration in method effectiveness (2→1, 3→1, and 3→2) while method changes occurring by way of an intervening pregnancy, whether accidental or planned, tend to involve improvements to method effectiveness. The discouraging aspect is that programmatic factors could have been made more active to reduce downward shifts in effectiveness. It is encouraging that, when a method change is involved, these results reflect considerable rationality in the fertility-contraceptive use decisions being made.

Influences of fertility motivation and method failure

To explore fertility motivation, individual experience with method failure and their separate influences on method change, a different analytical strategy must be adopted. To measure the factors affecting motivation to use contraception, data collected on the woman's number of living children when she began her first method in the 36-month period and her stated ideal family size (at the time of the survey) are used. A variable is defined which represents change in her fertility deficit over the period bounded by the use of two different types of methods. Basically, this variable indicates whether a woman began contraception with fewer children than she ideally wanted and how that deficit changed up to the time when she switched to a different method type.

The change-in-deficit variable takes a value of 0 if there were no fertility deficit at the start of the first method and 1 if the deficit were fulfilled by the birth of children up to the time the last method was begun. Values between 0 and 1 indicate partial reductions in fertility deficit by the time of the switch or end of the survey period. The variable is calculated as the ratio of the number of surviving children born during the period to the difference between ideal family size and number of children at the start. Of the 2975 women with available information on ideal family size, 71% had no fertility deficit and 14% fulfilled it before the method switch, leaving 15% with some deficit. It is expected that a woman with no deficit will be more strongly motivated to practise contraception effectively with the first method and that a woman achieving her family size ideal during the survey period will switch to highly effective methods. A potential weakness of the change-in-deficit measure is the possible rationalization of actual number of living children in the reported ideal number of children, since this number was ascertained at the date of the survey. In fact, the criticism of fertility rationalization is levied less frequently at the use of ideal family size than of desired

family size. (Separate tabulations examining the association between actual fertility and ideal family size by woman's age and education confirm that the latter is not a complete rationalization of the former.)

Method failure is measured as the number of accidental pregnancies per month for an individual woman while using the method type she used at the end of the first year of the survey period. Consequently it is a 'personal monthly failure rate' and should indicate a woman's level of efficacious contraceptive behaviour as well as the technical failure of methods (Trussell & Kost, 1987). Variation in the experience of method failure would be expected to be associated with patterns of method switches.

To study the influences of these two factors properly, the definition of a method change must be altered slightly. A change in method type over the 36-month period is now measured if the one observed in use at the end of the first year is different from that observed in use at the end of the third year. The state of never use has been added and all modern temporary methods combined together. It was necessary to impose time points to make a benchmark for the switch and to study any change across only one pair of method types because it otherwise would have not allowed sufficient time for pregnancies to occur. (The previous definition monitored switches in method type progressively across months, irrespective of the length of time between them.) There is a high degree of correspondence, nonetheless, between the prior and present definitions of method change.

Table 6 gives mean values of the method failure rate and fertility deficit measure controlling for the type of switching pattern. The woman's 'failure rate' is not relevant for non-use. The sociodemographic composition of the switchers is indicated by their mean age at the start of the survey period and their mean years of schooling.

With respect to method failure, there is a notable degree of contraceptive efficacy associated with continued traditional method use (0·04). One possible reason is that this group of women tends to be somewhat older (average age 30·9 years) and moderately educated (average 6·9 years of schooling). Another group with similar characteristics consists of women who remain with modern temporary methods. Their method failure rate averages 0·01, again quite low. Those who shifted from a modern temporary to a traditional method also have relatively low failure levels (0·08) but are slightly younger. Nonetheless, compared with the average failure rates for women shifting to more effective methods (modern temporary and permanent), the women in ending with traditional methods are not doing so because of accidental pregnancies. Indeed accidental pregnancies appear to promote women's switching from traditional to either modern temporary or permanent methods (rates of 0·22 and 0·32, respectively) or from modern temporary methods to sterilization (0·14). (Laing's cross-sectional approach (1985) does not consider duration of use when calculating failure rates. No duration data were collected for the methods used at the beginning of the 3-year window, so variation in failure with duration of use cannot be investigated.)

Motivation for contraceptive change, as judged from these data, seems integrally related to achieving fertility desires. Higher values of the change-in-fertility deficit measure mean the woman has moved closer to achieving her ideal family size. There is a clear and expected pattern of movement to more effective method types in conjunction with the achievement of fertility desires. The average of the fertility deficit variable increases from 0·20 to 0·63 in moving out of non-use into one of the

Table 6. Mean woman-specific failure rates, deficit in fertility desires, age* and educational attainment by pattern of method change

Pattern of method change† and (*N*)	Personal monthly failure rate	Change in fertility deficit	Age*	Years of schooling
Non-use to non-use (365)				
Mean	NA	0·20	29·2	6·0
SD	NA	0·33	6·9	3·4
Non-use to traditional (232)				
Mean	NA	0·46	26·1	6·9
SD	NA	0·33	6·3	3·4
Non-use to modern temporary (87)				
Mean	NA	0·48	25·4	6·9
SD	NA	0·34	5·5	3·4
Non-use to permanent (84)				
Mean	NA	0·63	29·0	5·7
SD	NA	0·47	5·2	3·2
Traditional to traditional (897)				
Mean	0·04	0·18	30·9	6·9
SD	0·12	0·34	6·4	3·5
Traditional to modern temporary (96)				
Mean	0·22	0·45	26·2	7·5
SD	0·34	0·41	5·1	3·0
Traditional to permanent (141)				
Mean	0·32	0·55	29·7	5·8
SD	0·52	0·47	5·6	3·2
Modern temporary to traditional (55)				
Mean	0·08	0·13	28·7	7·4
SD	0·26	0·28	6·2	3·1
Modern temporary to modern temporary (238)				
Mean	0·01	0·08	30·6	6·8
SD	0·07	0·24	5·8	3·6
Modern temporary to sterilization (47)				
Mean	0·14	0·57	28·1	6·5
SD	0·34	0·49	5·3	2·9

* Age of woman at start of method change.

† Definition of method change different from that previously used; see text.

three method types, and from 0·18 to 0·55 in moving from a traditional to a more effective method type. Women first observed using a modern temporary method, unless switching to sterilization, however, are still in a fertility-demand situation. The average educational level goes down across switches made by women first using temporary modern methods. Those inclined to resort to traditional methods have an average of 7·4 years of schooling compared to 6·5 years for women subsequently choosing to be sterilized.

Discussion

Studies of contraceptive method switching by childbearing couples can indicate the extent of (1) habitual use of fertility control measures and (2) abandonment of practices because of increased availability of more effective alternatives or dissatisfaction with existing ones. While contraceptive histories have problems of data weakness, they are increasingly collected and can be reliable instruments when the observation period is fairly recent. This study confirms the feasibility and importance of studying contraceptive method change.

The study has determined that there was consistent retention of use of the four method types in this period. In relation to the user's very first method, much shifting apparently occurs away from such modern methods as the pill, IUD, injectable, and condom. Of all switches by users in the 3 years preceding the survey, over half originate with traditional forms and more than one-third end in sterilization. The dominance of these two method types for contraceptive users in this rural sample, in addition to the contrasting degree of user control implied in their use, reinforces the need to examine the method sequences as they evolve in a setting of active family planning service provision.

It further draws attention to the association of method shifts with intervening fertility behaviour. Also observed in these data are the costs of non-use or imperfect use of fertility-regulating methods in terms of unplanned pregnancies and how they apparently influence women to adopt more effective contraception. Additionally, there are striking levels of individual efficacy in avoiding pregnancy with the practice of traditional methods over time.

It is planned to include non-use as a possible outcome in further analyses of contraceptive change with these data, as recommended by DaVanzo *et al.* and as in the Kane *et al.* study. Present efforts are limited to analysing the patterns of the switching process but it seems clear that the next logical step is a multivariate analysis modelling the determinants of the switching pattern. Such analysis would permit an estimate, for example, of the relative importance of method failures, fertility deficit, age, and education for switches from a traditional to either a temporary modern or sterilization method.

The results raise two alternative implications for the quality of programme services, the first of which concerns the programmatic emphasis placed on sterilization. Clearly women recognize and avail themselves of this option of permanent birth control as they complete their families. However, the infrequent use of temporary modern methods raises the question of whether programmes have neglected to provide such methods or if the methods are undesirable to contraceptive

users. Alternatively, the efficacious practice of traditional methods by some women also suggests that organized programmes in the country may promote their use and need not devote a substantial share of their limited resources to the acquisition and delivery of modern temporary methods.

Although questions remain about how best to measure a contraceptive method switch and the present analysis strategy has imperfections, an impressive degree of rationality has been found in the contraceptive method changes which occur with family formation. Rural Sinhalese women do not switch randomly between methods. Their attempts to control unwanted fertility lead them to seek and use increasingly effective contraception, including traditional methods.

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Appendix Table A. Frequencies of method switching patterns during the 3-year period

Pattern	No. of women (Total = 2745)	% of women with pattern
1	1139	41·5
2	165	6·0
3	113	4·1
4	806	29·4
12	65	2·4
13	40	1·5
14	167	6·1
21	55	2·0
23	8	0·3
24	30	1·1
31	19	0·7
32	7	0·3
34	22	0·8
121	30	1·1
123	1	0·0
124	2	0·1
131	5	0·2
132	4	0·1
212	12	0·4
214	8	0·3
231	2	0·1
312	1	0·0
313	1	0·0
314	2	0·1
321	1	0·0
1212	7	0·3
1213	2	0·1
1214	3	0·1
1231	1	0·0
1312	1	0·0
1314	1	0·0
2121	5	0·2
2124	2	0·1
2321	1	0·0
3121	1	0·0
3131	1	0·0
12121	5	0·2
21214	1	0·0
21312	1	0·0
121212	2	0·1
121314	1	0·0
132121	1	0·0
1212121	2	0·1
2121212	1	0·0
21212121	1	0·0