HEALTH RELATED ASPECTS OF FERTILITY IN SRI LANKA
A REPORT BASED ON DATA FROM THE 1975
WORLD FERTILITY SURVEY

(N)

This report of the health aspects of the World Fertility Survey was compiled
by WHO to complement other published analyses of the WFS data. It is pri-
marily for the use of the health authorities in Sri Lanka, as described on
p. 3 below.

Being the first report of its kind, it was reproduced in this form to allow
its distribution, for illustrative purposes, to interested parties in other
countries.

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Contents

1. INTRODUCTION

This report contains the results of an analysis of the data from the World Fertility Survey (WFS) in Sri Lanka (1975), with respect to certain health-related aspects of fertility. The analysis was carried out as part of a comparative analysis of WFS data which will eventually include all the countries from the developing world that have conducted a WFS. This comparative analysis, which is sponsored by various agencies of the UN system, has two main goals, namely to stimulate the exploitation and use of the findings within the countries concerned and to encourage the wider use of the data in countries which have not yet conducted a fertility survey.

The comparative analysis of health-related aspects of fertility is being conducted by WHO (Division of Family Health), in collaboration with the Office de la Recherche scientifique et technique Outre-Mer (ORSTOM), Paris, France. The analysis is in two phases, the first consists of an analysis of each individual survey with respect to the five selected areas of study: (1) fertility and contraceptive use; (2) reproductive health of adolescents; (3) infertility; (4) breastfeeding; and (5) infant and child mortality. The resulting report will be submitted to and discussed with the Ministry of Health of the country concerned in order that the results can be fully utilized for management of the health care system and in order to obtain the approval of the Ministry for use of the data in comparative analysis. The second phase is the comparative analysis proper, which will be carried out on a regional, rather than a global basis, and will be reported on in a series of publications.

The present analysis is based on data published in the First Report (see 2.1 below), as well as on the data tapes compiled from the individual survey questionnaires. Although many different approaches to the analysis were made, only those results which were judged to be of special interest to the health and family planning policies of Sri Lanka are presented in this report.

Map of Sri Lanka with the
six zones of the survey.
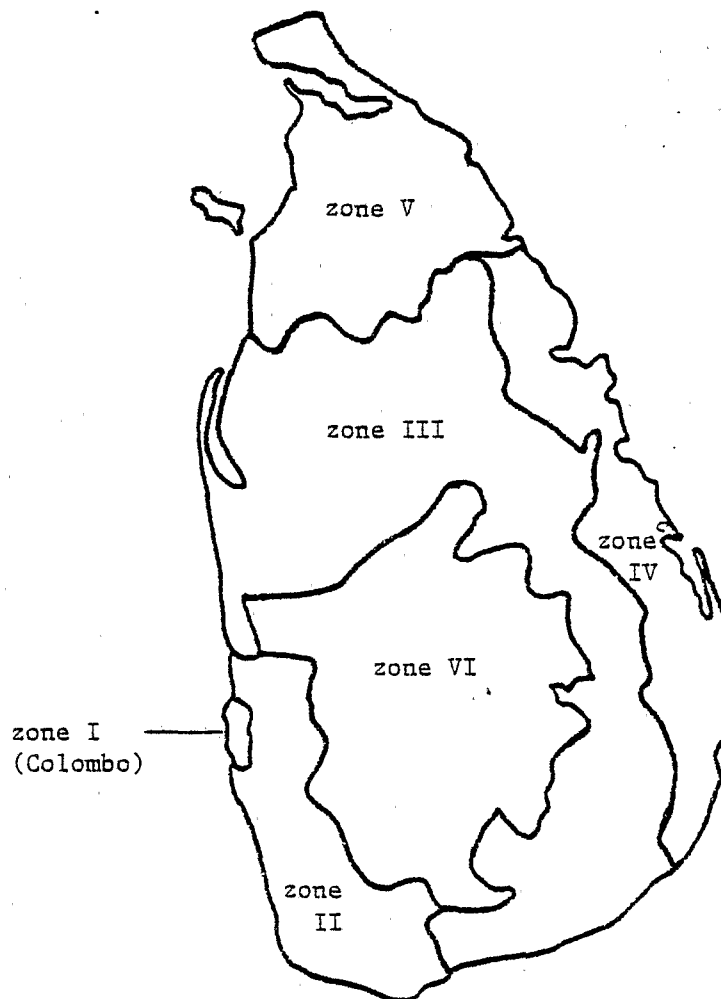
2. MATERIALS AND METHODS

2.1 The survey

The field work of the survey was carried out from August to October 1975, in a nationally representative sample of 8 834 housing units. A report was issued in March 1978 by the Department of Census and Statistics, Ministry of Plan Implementation, Sri Lanka, which is referred to in this document as the First Report. A detailed description of the sampling methodology, which is only summarized below, is to be found in that report.

2.1.1 Sample design

The Sri Lanka WFS was based on a two-stage stratified probability sample designed to give complete coverage with respect to six geographical zones, and with respect to urban/rural and estate strata. The final sample consisted of all ever-married women aged 12-49 years living in selected housing units. Table 2.1 shows the geographical distribution of the women interviewed.

2.1.2 Weighting of results

To compensate for differences in sampling probabilities between different strata and for different response rates within strata the data were weighted before calculations were made. The range of weights are shown in table 2.1. These weights were scaled so that the average value for an interview in the sample is 1.0. The frequencies shown in the tabulations in this report are generally the weighted frequencies, shown in table 2.1, which for the sample as a whole are identical to the actual number of interviews. However, due to the varying sampling fractions there are some minor deviations in the totals in the tables and some inconsistencies between tables are thus unavoidable.

Table 2.1 Summary of the sample

Zone		Sample weights	Number of ever-married women in:	
			unweighted sample	weighted sample
1	Colombo	.443 - .497	927	433
2	SW Lowlands	1.707 - 1.763	1 083	1 894
3	S Dry Zone	.734 - .965	1 246	962
4	E. Costal Belt	.426 - .461	861	391
5	N Dry Zone	.608 - .610	775	473
6	S Central Hills	1.264 - 1.415	1 920	2 659
	All	1.000	6 812	6 812

Note: Weights are ranges per stratum, for individual interviews.

2.1.3 Response rates

The overall response rate was over 99%, with little variation between zones or strata.

2.2 Quality of the data

. Most of the data used in this analysis came from the sections on "maternity history" and "contraceptive knowledge and use" in the individual questionnaires. The 6 812 women interviewed had had a total of 26 849 live births, of which 2 070 in 1974 and 1975. They had 24 050 living children.

Before any analysis of the data was undertaken, an attempt was made to evaluate the quality of the data in those respects which seemed particularly important. This evaluation was carried out on the so-called "raw data", thus avoiding any of the imputed values contained in the recoded data.

2.2.1 Declared live births

As calculated from the maternity histories, the number of live births for each of the years 1967-73 was just over 1 200; but in 1974 it was only 1 120 and for 1975 the figure was 859, corresponding to about 1 240 for the whole year. A similar anomaly was found in the sex ratio for 1974 and 1975 and it was concluded that some systematic recall error had probably affected the declarations of recent births, shifting their dates between the years 1973-74 and 1974-75. To minimize the effects of this error, the analysis of recent fertility was based on all the births in 1974 and 1975 combined.

The dates of birth were, mostly, precisely declared by month and year and for the last live births, 83% were thus declared; some 75% of all last closed birth intervals were precisely determined. In view of this it was decided to include all intervals in the analysis, using the imputed value where the exact value was not known.

2.2.2 Stillbirths and abortions

The information obtained on past pregnancies with issues other than a live birth was less satisfactory. This survey seemed to confirm the well-known difficulties of obtaining reliable data on pregnancy wastage from retrospective surveys, and this aspect was not analysed further.

2.2.3 Current pregnancies

A total of 626 women declared themselves to be currently pregnant and gave the (perceived) duration of their pregnancies as shown in table 2.2 below.

Table 2.2 Declared current pregnancies by duration

Duration of pregnancy (months)	Number of women
0	44
1	86
2	79
3	89
4	90
5	90
6	73
7	47
8	24
9	4
All	626

The distribution of current pregnancies by declared duration seems rather strange and demonstrates the uncertainties involved in perceiving (and/or being willing to declare) a pregnancy. The overall degree of error (under- registration) was estimated by calculating the expected number of births resulting from the declared pregnancies, using age-specific estimates of fetal wastage rates, and comparing the resulting births with the current age-specific fertility rates. The declared pregnancies were thus estimated to cover about 66% of the actual pregnancies, but about 75% in the women below 30 years of age. This agrees quite well with results obtained in studies in other countries. It nevertheless means that analyses which take account of pregnancy status are likely to be biased. The under-registration of pregnancies and the uncertainty of their duration will affect the data on breastfeeding, on contraceptive use and on birth intervals.

2.3   Socioeconomic variables

In addition to data on demographic and biological variables, some socioeconomic data were collected for each respondent such as information on ethnic group, education, occupation and place of residence. This made it possible to examine the association between fertility patterns and these background variables in order to identify groups who were in particular need of health care, including family planning services.

In order to do this the links between the socioeconomic and other variables collected in the survey were examined by the method known as correspondance analysis, a multivariate technique by which it is possible to make a simultaneous evaluation of all the "explanatory" variables, in relation to number of children born to the women, and identify clusters of women with similar fertility levels and similar "explanatory" characteristics . In this way five "type groups" of women were identified, according to the following characteristics (each individual respondent being assigned to the first group into which she fitted):

Group 1	respondent or husband having more than ten years of schooling; or husband's occupation "clerical" or "professional"
Group 2	respondent Indian Tamil and/or residing on an estate
Group 3	respondent a Moor and/or a Muslim
Group 4	respondent or husband illiterate; or husband a farmer; or husband having no monetary income
Group 5	others

Three of these groups (group 1, 5 and 4) represent in descending order three socioeconomic levels (in the usual sense of the word), the other two, represent distinct ethnic minority groups. In order to maximize the usefulness of the analyses which follow groups 1, 5 and 4 have been renamed SE 1, SE 2 and SE 3 respectively; group 2 is described as Indian Tamil and group 3 as Moor. The number and percentage of women in each group in each zone is given in table 2.3 below.

Table 2.3   Percentage distribution of ever married women by zone and type
             group.   Number of women in brackets

Type group	Zone						
	1	2	3	4	5	6	All
SE 1	40 (174)	30 (564)	18 (175)	16 (64)	34 (160)	18 (496)	24 (1633)
SE 2	38 (164)	39 (733)	15 (138)	16 (62)	26 (124)	18 (484)	25 (1705)
SE 3	10 (42)	28 (537)	57 (550)	37 (143)	33 (158)	39 (1028)	36 (2458)
Indian Tamil	1 (6)	1 (29)	0 (3)	1 (6)	3 (12)	23 (600)	10 (656)
Moor	11 (47)	2 (31)	10 (96)	30 (116)	4 (19)	2 (51)	5 (360)
All	100 (433)	100 (1894)	100 (962)	100 (391)	100 (473)	100 (2659)	100 (6812)

3. FERTILITY AND CONTRACEPTION

This chapter is mainly concerned with the pattern of contraceptive behaviour and its relations to fertility.   It begins with an overview of observed fertility patterns.

3.1   Fertility

The First Report contains several measures of fertility, such as the number of children ever born, the parity progression ratio, and current age-specific birth rates.   Some of these are examined below.

3.1.1   Number of children ever born – parity

For women who have completed their families parity was distributed symmetrically around a mean of 6 with a standard deviation of 3 (see Figure 3.1).

Figure 3.1   Percentage distribution of women according to attained parity.
Confined to ever-married women currently aged 45-49 years.
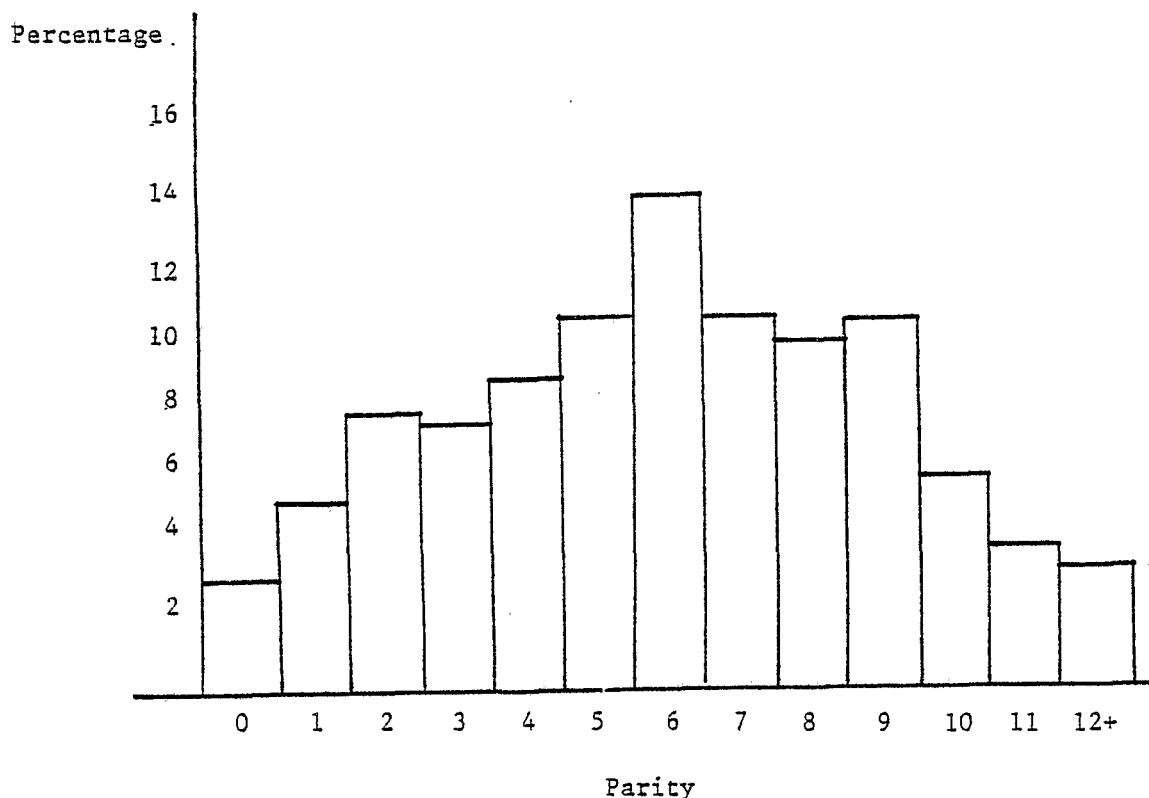
Source: Appendix Table 1.

The mean parity increases with age but within each age group there are considerable socioeconomic and other differences.   After standardising for age there is a difference of about 1.6 children between socioeconomic group 1 and socioeconomic group 3 and of over 2 children between socioeconomic group 1 and the Moors (see table 3.1);   The Indian Tamil women have a relatively low average number of children ever born.   The differences are similar if only completed fertility (at age 45-49 years) is included in the comparison.

Table 3.1   Mean parity by type group, standardized for age and at current age
             45-49 years

Type Group	Standardised mean	Mean at 45-49 years
SE 1	3.0	4.9
SE 2	3.9	5.8
SE 3	4.6	6.4
Indian Tamil	3.7	5.3
Moor	5.2	6.6
All women	3.5	5.9

Note: Based on Appendix Table 2

The analysis by educational level (table 3.2) gives a gradient very similar to that by type group.

Table 3.2   Mean parity by educational level, standardized for age and at current
             age 45-49 years

Years of schooling	Standardised mean	Mean at 45-49 years
10 or more	2.4	4.2
6-9	3.6	5.5
1-5	4.3	6.0
none	4.7	6.4
All women	3.5	5.9

Note: Based on Appendix Table 2

By comparing succeeding cohorts it is possible to ascertain whether there has been a change over time in mean parity.   Table 3.3 shows the mean parity at given ages, for 5 different cohorts (current age groups).

Table 3.3   Mean parity at specified birthdays by current age

Birthday	Current age in years				
	25-29	30-34	35-39	40-44	45-49
20	0.6	0.7	0.8	0.8	0.8
25	1.9	2.0	2.1	2.1	2.2
30		3.3	3.5	3.6	3.7
35			4.6	4.8	4.9
40				5.4	5.7
45					5.9

From this table it is possible to discern a slow but regular decrease of parity at each age from the oldest to the youngest cohorts of women. This decrease is of the order of 0.7% per year and would, if maintained, reduce total parity from about 6 for the women born in 1925-29 to about 5 for the women born in 1950-54.

3.1.2   Parity progression ratios

The parity progression ratio shows the proportion of women who, at a given parity, went on to have at least one more child. When applied to the higher age groups it is another way of measuring completed parity.

A comparison of the two oldest cohorts, those aged 40-44 years with those aged 45-49 years, shows a slight fall in the ratios for higher parities over time (see Appendix Table 3).

The differences in fertility between socioeconomic groups become evident in the parity progression ratios for parities higher than 2 (see Appendix Table 4). An analysis by years of schooling (Appendix Table 5) shows lower ratios for those with more years of schooling.

3.1.3   Current fertility

A comparison of age-specific fertility rates of 1963 and 1970 with those for 1974 found in the WFS (see First Report, Table 5.13) shows that there has been a considerable decline in fertility at all ages, leading to a decline in the total fertility rate from 5.04 in 1963 to 4.22 in 1970 to 3.35 in 1974. When age-specific fertility rates are compared with similar rates for married women (marital fertility rates) it becomes evident that almost all of the decline over the period studied is due to changes in nuptiality rather than to changes in marital fertility although within marriage there was some decline in fertility over time, especially in the age group 25 to 35 (First Report Table 5.13).

Age-specific marital fertility rates for the 5 type groups are remarkably similar (see table 3.4 below). A comparison by years of schooling even seems to indicate a positive association between years of schooling and fertility in most age groups - a phenomenon no doubt due to the fact that age at marriage is also positively correlated with schooling (see the age structure in table 3.4) and that fertility is determined in part by duration of marriage.

Table 3.4   Age-specific marital fertility rates for the two years preceding the
             survey by type group and years of schooling.   Confined to women
             married at least 2 years.   Number of women in brackets

Group	Current age in years			
Type group	< 20	20-24	25-34	35 or more
SE 1	-	394 (137)	251 (619)	61 (627)
SE 2	-	339 (186)	223 (599)	60 (773)
SE 3	-	337 (227)	251 (737)	77 (1365)
Indian Tamil	-	300 (70)	217 (265)	59 (281)
Moor	-	343 (51)	246 (126)	68 (147)
Years of schooling				
10 or more	-	392 (51)	255 (366)	98 (323)
6-9	409 (22)	358 (211)	218 (634)	61 (653)
1-5	339 (28)	324 (306)	244 (929)	66 (1274)
None	-	364 (103)	236 (416)	65 (941)
All women	336 (73)	346 (671)	240 (2346)	68 (3193)

3.2   Contraception

3.2.1   Approach to analysis

The health authorities are concerned with, and often have the main responsibility for providing all couples with the information and services necessary to allow them to have the number of children they want and when they want them.   This involves promoting and supplying contraceptive methods which are safe, acceptable and effective.   From the survey data it is possible to quantify the demand for contraception, i.e., desire to space or to avoid pregnancy and the extent to which this demand is currently being satisfied and thereby to identify the main target groups for future family planning efforts.

The reference group of women, in this report called the "exposed" women consists of those currently married women who declared that they were fecund but not pregnant.   Women who had been sterilized for contraceptive purposes were, in line with WFS practice, included in this group, despite the fact that they were not fecund, since they constitute an important group of current contraceptive users.   It is implicitly assumed that they want no more children. Pregnant women are included in the analysis of section 3.2.2 (The desire for more children) but are excluded from all analyses of contraceptive use.   It is probable that the under-registration of pregnancies mentioned in section 2.2.3 above resulted in a slight over-estimation of the "exposed" group, presumably mostly of the non-users.

3.2.2   The desire for more children

Whether a woman wanted more children was found to depend almost entirely on her age and on the number of her living children (see table 3.5 below).   The overall percentage of women who want no more children is 61% *, but for women under 20 years of age or with just one child it is only 14%.   Of those having no children, a large majority want a child regardless of their age and of those having one child the majority are content only after age 44. Overall the point at which the majority of women wish to terminate childbearing is age 30 and 2 living children.   At family sizes of more than two even the younger women do not want more children.   Overall the number of living children had a more important effect than current age.

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* N.B.   This is slightly less than the percentage shown in table 3.8 which excludes pregnant women.

Table 3.5   Percentage of exposed women (including those currently pregnant)
                   who want no more children by number of living children and
                   current age

Current age in years	Number of living children							Number of women
	0	1	2	3	4	5+	All	
less than 20	0	7	61	–	–	–	14	188
20-24	0	10	41	67	78	71	30	866
25-29	0	11	38	66	80	84	46	1207
30-34	0	15	56	73	86	89	68	1096
35-39	7	33	60	80	91	93	80	961
40-44	17	42	72	82	98	95	86	606
45-49	18	74	88	100	96	99	94	398
All ages	2	14	50	73	87	92	61	
Number of women	358	950	895	856	666	1597		5322

The desire for more children was also found to be dependent on the sex of the children a woman already had.

At each family size (the diagonals of table 3.6) more women wanted to stop childbearing if they had a fairly equal number of each sex than if the sex ratio was unbalanced. Thus for example the proportion of women with three living children who wanted to stop childbearing was 73% overall, but varied from 88% for a woman with two boys and one girl, to 83% for a woman with two girls and one boy, to 72% for a woman with three boys, to only 51% if she had no boys. The preference for boys which emerges from these figures is evident at all parities.

Table 3.6 Percentage of exposed women (including those currently pregnant) who
          want no more children by the number of living boys and number of
          living girls

| Number of living girls | Number of living boys | | | | | | | Number of women |
	0	1	2	3	4	5+	All	
0	7	22	54	72	77	–	29	1416
1	28	71	88	95	99	96	67	1483
2	46	83	95	97	97	97	84	1068
3	51	91	95	97	100	98	89	693
4	70	92	97	100	98	100	94	361
5+	–	95	97	96	100	100	97	301
All	27	63	85	93	96	96	67	
Number of women	1335	1497	1125	704	381	280		5322

A similar gradient was seen in all the type groups and at all levels of education.
Overall the differences in the proportion of women wanting no more children, by type group
and levels of education, are almost entirely due to differences in family composition.

3.2.3 Unwanted births

From a question relating to the last birth it was possible to estimate unwanted
fertility. Table 3.7 shows the proportion of women who before their last pregnancy desired
no more children; who in effect did not want their last birth. From the table it can be
seen that in all 42% of women did not want their last birth. The proportion increased with
family size, of those already having two living children one-third did not want their next
pregnancy. The proportion increased to over one-half for those with three living children
and three-quarters for those with 5 or more children. At each family size fewer women in
SE 1 had unwanted pregnancies.

Table 3.7   Percentage of women who did not want their last birth (or pregnancy
for those currently pregnant) by the number of living children at the
time of becoming pregnant and by type group

Type group	Number of living children						
	0	1	2	3	4	5+	All
SE 1	-	3	15	27	45	64	28
SE 2	0	5	20	34	52	72	42
SE 3	3	8	21	35	58	72	48
Indian Tamil	-	3	-	-	-	76	33
Moor		4	20	40	53	74	48
All women	5	6	19	33	54	72	42

3.2.4   The desire for more children and contraceptive use

The 4710 exposed women fell into four basic groups, according to whether they wanted or
did not want any more children and according to whether they were or were not currently using
contraception.

Table 3.8   Percentage distribution of exposed women by four major
categories. Number of women in brackets

	Wanting more children	Wanting no more children	All
Currently using contraception	Spacers/post-poners 7 (320)	Stoppers 35 (1634)	41 (1954)
Not currently using contra-ception	Potential spacers 26 (1244)	Potential stoppers 32 (1512)	59 (2756)
All women	33 (1564)	67 (3146)	100.0 (4710)

Overall 41% of women were using contraception, but among those not wanting more children one-half (50%) were currently using contraception. For those wanting more children one-fifth (20%) were currently using contraception to space their families. The use of contraception among those not wanting any more children (the proportion of stoppers) was unlike the desire for children, largely independent of age and family size, whereas among those wanting more children there is some indication that the proportion using contraception (the spacers) increases with age but not with family size.

On the other hand socioeconomic background, as depicted by the type groups does have a very important influence on the contraceptive behaviour of those not wanting any more children (see table 3.9 below). Within each type group the effect of parity (family size) was negligable.

Table 3.9   Percentage of contraceptive users among exposed women wanting no more children, by type group

Type group	Number of women wanting no more children	Percentage of these using contraception
SE 1	721	68
SE 2	840	60
SE 3	1153	44
Indian Tamil	274	30
Moor	150	29
All women	3138	52

There is also a definite relationship between educational level and contraceptive use by those wanting no more children - see table 3.10 below. Within educational levels there is a tendency for greater use by younger women.

Table 3.10   Percentage of contraceptive users among exposed women wanting no more children, by educational level and broad age group

Years of schooling	Current age in years		
	25 - 34	35 - 44	All ages
10 or more	44	46	42
6-9	42	38	39
1-5	40	30	32
None	34	26	26
All women	40	33	33

3.2.5   Methods of contraception

Table 3.11 below shows the methods of contraception currently being used by stoppers and spacers.   Among stoppers the most popular method is female sterilization, which accounts for one-third of users;   the next most popular modern method is the IUD.   The pill was used by very few.   If the percentage distribution of methods used by stoppers is recalculated excluding sterilization because obviously sterilization will not be used as a contraceptive method by the spacers.   It becomes evident that the pattern of usage of method by stoppers and spacers is very similar for the remaining methods.   Slightly fewer spacers used traditional methods, significantly fewer relying on abstinence.   (Spacers are younger than stoppers.)

While the choice of method apparently did not depend much on the desire for more children, it did depend a great deal on the age and family size of the woman, see table 3.12 below.   Women below 25 years of age did not use much contraception but when they did they preferred to use modern methods (especially IUDs).   For women above 25 years of age, the most striking observation is the rapid increase in the proportion sterilized by increasing family size.   It is tempting to hypothesize that as parity increases sterilization tends to replace the use of traditional methods.

Table 3.11   Percentage distribution of current users of contraception by
                   method and by their desire for more children;   (a) all
                   methods;   (b) excluding sterilization

Method of contraception	Stoppers		Spacers	Both	
	(a)	(b)	(a) + (b)	(a)	(b)
Female sterilization	35			29	
Male sterilization	3			2	
All sterilizations	37			31	
Pill	4	7	8	5	7
IUD	14	23	21	15	22
Other modern	7	11	15	8	12
All modern (excl. sterilization)	25	39	44	28	41
Witdrawal	4	6	8	4	7
Abstinence	12	19	9	11	16
Rhythm	23	36	39	25	37
All traditional	38	61	56	41	59
All users	100	100	100	100	100
Number of women	1634	1027	320	1954	1347

Note: Percentages calculated before rounding

Table 3.12   Percentage distribution of current users of contraception, by method and by age and by number of living children.   Women with no children are not included

Age	Number of living children	Groups of methods				Number of women
		Sterilization	Other modern	Traditional	All	
under 25 years						
	1 & 2	1	60	39	100	134
	3 & 4	26	50	24	100	50
	5 or more	-	-	-	-	3
	All	9	56	35	100	187
25-34 years						
	1 & 2	4	36	60	100	284
	3 & 4	32	35	33	100	367
	5 or more	58	26	16	100	216
	All	29	33	38	100	867
35 years and over						
	1 & 2	14	24	62	100	101
	3 & 4	26	23	51	100	267
	5 or more	44	19	37	100	532
	All	35	21	44	100	900
All ages		30	30	40	100	1954

The methods used were to a large extent independent of socioeconomic background (type group), within similar age/family size groups.   One exception was sterilization, specifically vasectomy, which was much more commong among Indian Tamils than among the other groups.   Table 3.13 below shows the distribution of users in each of the type groups by methods.   In order to exclude the strong parity effect the table is restricted to women of parity 5 or more, who want no more children.

Table 3.13   The percentage distribution of current users of contraception
             by method and type group.   Confined to those wanting no more
             children and who are of parity 5 or higher

Type group	Method of contraception				Number of women
	Sterilization	Other modern	Traditional	All	
SE 1	54	17	29	100	142
SE 2	43	21	36	100	247
SE 3	48	20	32	100	351
Indian Tamils	67	4	29	100	45
Moors	52	15	33	100	27
All women	48	19	33	100	812

When the methods currently used by the exposed women are compared to those first used by them (table 3.14), one can discern certain patterns of change, although the table does not, of course, show all the changes which occurred between first use and current use.

Contraceptive use, once adopted by an exposed woman, was fairly stable.   Among the 2447 ever-users of any method, 1365 or 56% were still currently using the method which they first adopted, and only 494 or 20% were not currently using any method at all.   For these latter, it is not known how many stopped in order to have another child.   The proportion having stopped was about the same for the traditional methods (22%) as for the modern methods (26%).

For those first having used the pill the proportion having stopped (37%) was higher than for any other method, and the proportion still using the same method (18%) was lower than for any other method.   To replace the pill as many as 19% of these women had chosen sterilization.   Apparently the popularity (or availability?) of the pill, not too high in the first place and largely confined to "spacers", has decreased.

A change from first use of a traditional method to current use of a modern one (20%) was much more frequent than change in the other direction (8%), as indeed one might expect.   Of all these changing to modern methods, more than half chose sterilization.   Among the traditional methods, rhythm was by far the most frequent, both as first method and as current method.

Table 3.14   The exposed ever-users of contraception by method first used and that currently being used

Method currently used	Sterilization			Modern methods				Traditional methods				Total Number of Women
	Female	Male	Both	Pill	IUD	Other*	All**	Withdrawal	Abstinence	Rhythm	All	
Female sterilization	335	0	335	62	22	20	104	15	21	91	127	566
Male sterilization	0	26	26	5	3	1	9	0	2	6	8	43
All sterilizations	335	26	361	67	25	21	113	15	23	97	135	609
Pill	0	0	0	65	8	3	76	1	3	15	19	95
IUD	0	0	0	40	186	7	233	7	8	42	57	290
Other modern	0	0	0	18	13	95	126	9	6	20	35	161
All modern (excl. sterilization)	0	0	0	123	207	105	435	17	17	77	111	546
Witdrawal	0	0	0	3	1	1	5	71	0	16	87	92
Abstinence	0	0	0	9	3	7	19	5	158	32	195	214
Rhythm	0	0	0	23	16	7	46	7	10	429	446	492
All traditional	0	0	0	35	20	15	70	83	168	477	728	798
None	0	0	0	134	54	27	215	26	77	176	279	494
Total Number of women	335	26	361	359	306	168	833	141	285	827	1253	2447

* In order of frequency: condom, douche, injectables, other female.

** excluding sterilization.

3.2.6   Non-users of contraception: those not wanting any more children

Of the 3 146 exposed women not wanting any more children (see table 3.6) 2 134 or 68% were not currently using a modern method of contraception and 1 512 or 48% were not using any method at all.

When these 1 512 non-users who want no more children (the potential stoppers) are expressed as a percentage of all exposed women in each age and parity groups (table 3.15) it becomes evident that the proportion of potential stoppers by age and family size is determined almost entirely by the proportion not wanting any more children.   In the high age/family size groups the potential stoppers make up nearly half of all exposed women.

Table 3.15   The percentage of exposed women in each age and family size group who did not want any more children and were not currently using any contraception.   Total number of exposed women in each age/family size group is given in brackets.)

Number of living children	Current age in years			
	< 25	25 - 34	35 or more	All ages
0	1 (149)	1 (145)	11 (63)	3 (358)
1 or 2	15 (510)	15 (730)	43 (306)	21 (1546)
3 or 4	34 (116)	37 (741)	40 (491)	38 (1348)
5 or more	44 (9)	41 (400)	48 (1049)	46 (1458)
All parities	15 (784)	27 (2016)	44 (1910)	32 (4710)

About one-half of the exposed women who want no more children are not using any method of contraception (see table 3.16).   The proportion is slightly higher among the younger women with small families, but no other differences are evident.   If the analysis is confined to those using a modern method of contraception however, a very distinct pattern emerges (see Appendix Table 6) with an increase of motivation with increasing family size and a decrease in motivation (and possibly exposure) with increasing age.

Table 3.16   Percentage of exposed women who are not currently using any method
of contraception, by age and number of living children.   Confined to
women who want no more children.   Number of women in brackets

Number of living children	Current age in years			
	< 25	25-34	35 or more	All ages
0	- (1)	- (2)	- (7)	- (10)
1 or 2	60 (127)	43 (260)	64 (206)	54 (593)
3 or 4	48 (81)	45 (603)	44 (450)	45 (1134)
5 or more	- (7)	44 (377)	49 (1025)	48 (1409)
All women	56 (217)	44 (1242)	50 (1688)	48 (3146)

The failure to use contraception could not be explained by a lack of knowledge as almost 90% of the non-users (of any method) knew of at least one method (see table 3.17 below). The most widely known were the modern methods - female sterilization, the pill, the IUD and the condom, in that order, were known by a large proportion of non-users. The biggest discrepancies in knowledge between current users and potential users concerned the traditional methods, all of which were known twice as often by users (of any method) as non-users. Male sterilization was known by only about one-third of non-users, whereas about 80% of them knew about female sterilization.

Table 3.17   Percentage of women in each of the 4 categories of table 3.6 who knew of given method of contraception

Method	Actual		Potential	
	Stoppers	Spacers	Stoppers	Spacers
Female sterilization	96	93	80	77
Male sterilization	52	63	32	34
Pill	90	93	77	77
IUD	80	87	55	56
Injection	52	51	41	42
Condom	64	81	42	52
Other female modern	17	21	8	9
Withdrawal	33	45	12	17
Abstinence	47	51	24	23
Rhythm	65	78	32	33
Douche	14	17	6	7
Other	3	5	3	3
Any method	100	100	89	88
Number of women	1 634	320	1 512	1 244

There is a distinct socioeconomic gradient in the knowledge of any method by potential users (table 3.18A) and also in the intention to use contraception in the future (table 3.18C), but no social gradient in ever use among potential users knowing any method (table 3.18B). About one-fifth of all potential stoppers who knew of a method but had never used one, intended to use one in the future. Interestingly enough the highest proportion is among the Moor group where knowledge was relatively low.

Table 3.18   Analysis by type and education group

A.   Number of women who know of any method, expressed as a percentage of all
potential users

Type group	Potential stoppers	Potential spacers
SE 1	97	96
SE 2	95	93
SE 3	87	86
Indian Tamil	82	69
Moor	81	77
Years of schooling		
10 or more	100	98
6-9	96	92
1-5	90	86
none	81	72
All women	91	86

B.   Number of women who know of, but have never used any method,
expressed as a percentage of all potential users

Type group		
SE 1	64	81
SE 2	63	74
SE 3	67	78
Indian Tamil	70	66
Moor	72	72
Years of schooling		
10 or more	99	96
6-9	90	84
1-5	79	72
none	63	51
All women	66	76

C.   Number of women who know of, and have never used any method, but who
intend to use contraception in the future, expressed as a percentage of
all potential users

Type group		
SE 1	21	46
SE 2	20	37
SE 3	20	36
Indian Tamil	24	35
Moor	32	32
Years of schooling		
10 or more	36	54
6-9	29	45
1-5	25	35
none	20	21
All women	21	37

As regards the reasons for non-use among this group of never-users who claimed not to want any more children, the information available was not too helpful. Almost half of the women did not answer the relevant question (see table 3.19). It is nevertheless interesting to note that only 7-8% did not know of any source of supply. Frank disapproval of ————— contraception, by the woman or by her husband, accounted for less than a quarter of the reasons, and for only 16% among the younger women. The reasons "recently married" and "wants more children" would seem to be inconsistent with the stated desire not to want any more children, and "believes cannot conceive" with the definition of "exposed". However, as this question relates to reasons for never having used rather than to current use it may be that these were valid reasons in the past.

There were no great differences in the reasons given for never use by type group.

Table 3.19   The percentage distribution of reasons for never-use of contraception given by exposed women who want no more children, know of contraception but have never used it

Stated reason for never-use	Current age in years	
	25	25 or more
Respondent and/or husband disapproves of FP	16	24
Recently married	18	1
Wants many children	22	9
Knows of no source of supply	8	7
Believes she cannot conceive	1	11
Reason not stated	35	49
All reasons	100	100
Number of women	80	926

3.2.7   Non users of contraception: those who want more children.

The 1 244 exposed women who wanted more children and were not current users of contraception (see table 3.8) mainly had small families; about 80% of them had two or fewer children, and many (38%) were aged less than 25 years. They made up the large majority of exposed women in the small family size and/or low age groups (see table 3.20).

Table 3.20   The percentage of exposed women in each age and family size group who
wanted more children and were not currently using any contraception.
Total number of exposed women in each age/family size group is given
in brackets

Number of living children	Current age in years			
	< 25	25 - 34	35 or more	All ages
0	95 (149)	92 (145)	89 (63)	93 (358)
1 or 2	59 (510)	46 (730)	25 (306)	46 (1546)
3 or 4	24 (116)	14 (741)	7 (491)	12 (1348)
5 or more	11 (9)	6 (400)	2 (1049)	4 (1457)
All women	60 (784)	30 (2016)	9 (1910)	26 (4710)

Among these women, the potential spacers, the knowledge of contraception was of the same
level as among the potential stoppers - i.e., nearly 90% knew of some method (see table 3.17
above).   The level of knowledge had the same social gradient as was found for potential
stoppers (table 3.18A) with the exception that in the Indian Tamil group many fewer potential
spacers knew of any method than did potential stoppers (69% as against 82%).   A similar, but
less pronounced difference was also found among the Moor group.

About 14% of the potential spacers knowing a method of contraception had used
contraception in the past, a proportion which increased with age and parity but did not seem
to be related to socioeconomic class.   About half of the potential spacers who knew of a
method but had never used one, intended to use contraception in the future, and this
intention was relatively independent of parity.   Of the younger women (under 25 years of
age), 61% intended future use, while only 45% above 25 years of age did so.   The intention
to use contraception in the future was related to social class (table 3.18C).

Most of this group of women wanted one or two additional children, except for the
nulliparous who mostly wanted 2 or 3.   This is shown in table 3.21 below, in which women
using contraception but wanting more children are included for comparison.   This latter
group wanted, as one might expect, fewer additional children than the former, but the
difference was not very great.

Table 3.21   Percentage distribution of exposed women according to the number of
             additional children wanted, by number of living children and by
             current use or non-use of contraception.   Confined to women who want
             more children

Additional children wanted	Number of living children				
	0*	1 or 2		3 or more	
	Non users	Users	Non users	Users	Non users
1	5	76	61	84	79
2	56	18	29	16	19
3	29	5	7	-	0
4 or more	10	1	3	-	2
All women	100	100	100	100	100
Number of women	332	248	710	59	202

* The 13 users in this group were excluded from the table.

3.2.8   Contraceptive use-effectiveness

It is not possible to estimate contraceptive use-effectiveness from the survey data,
since the period of use (and/or reason for discontinuation) prior to the last pregnancy was
not stated.   It is thus not known whether the last unwanted pregnancy was due to
contraceptive failure or to non-use of contraception.

However, the current fertility data (i.e., 1974-75) did show a markedly lower
age-specific fertility for contraceptive users, in comparison with the non-users, as
illustrated in figure 3.2.

Figure 3.2   Age-specific fertility rates for users and non-users of contraceptives
              by the desire for more children confined to births in the 2 years preceding
              the survey and to women married at least 2 years

Fertility rate
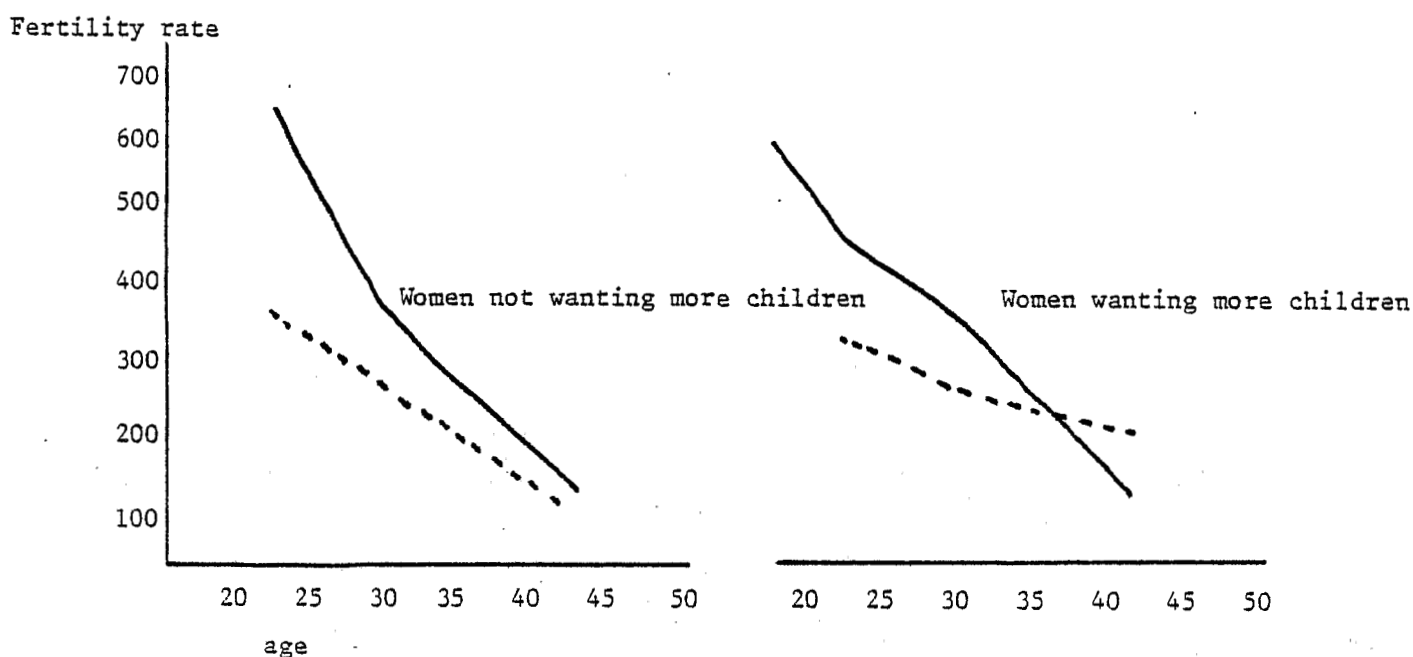
Based on Appendix Table 7.

3.3   Implications of the findings

The main findings of this analysis of contraceptive use and non-use largely corroborate
those contained in the First Report and succinctly summarized in section 9 of the report.
The focus on health-related aspects of fertility regulation have raised a few additional
points or hypotheses which it might be useful to examine further in the light of detailed
local knowledge.   These are briefly discussed below.

Unquestionably the most important finding of the WFS is the large number of exposed women
in all social groups who want no more children but who do not practise contraception and even
do not intend to do so, despite a widespread knowledge of contraceptive methods.   Apart from
being inconsistent such attitudes and behaviour are certainly an important contributory cause
of the large proportion of unwanted births and, by implication, the associated negative
consequences for the health and well-being of the mother and the child.

The root-causes of this situation will have to be identified by other means than analysis
of the WFS survey data, but it seems highly likely that they have to do with the
acceptability and accessibility of modern methods of contraception.   In this connexion ,
female sterilization already popular, would seem to deserve particular attention as the
method of choice for couples who have reached their desired family size.   It could be
offered as a routine post-partum service after the second or third child onwards and access
could be facilitated in various ways for other than post-partum (and post-abortion)
sterilizations.

Another possible approach might be to build on the great popularity of "rhythm" for the
promotion of the new scientific natural methods which, when appropriately applied with
willingness to abstain in the fertile period give 95-99% protection against pregnancy.   Such
promotion is essentially of an educational nature and thus relatively independent of the
health infrastructure.

4. REPRODUCTIVE HEALTH OF ADOLESCENTS

The term adolescent is used here as meaning those under 20 years of age, although particular attention is given to those aged less than 18 years. The reason for including this area of study in the comparative analysis is the increasing awareness, in many countries, of the health problems specifically associated with the sexual and reproductive behaviour of adolescents. In this respect, Sri Lanka appears to be in a relatively favourable situation since for women the age at marriage is one of the highest in Asia and premarital sexual activity is very limited.

Of all the ever married women included in the survey 3% were aged less than 20 years. In 1974/75 these women gave birth to 23 children who accounted for 1% of all births in those years - a very low proportion indeed. Only one-fifth of all the women interviewed had their first child when they were not yet 20 years old.

4.1 Nuptiality

The late beginning of childbearing reflects a late average age at marriage (see table 4.1 below) not a postponent of childbearing within marriage (see also section 3.1.3 above). As was shown in section 3.2.3 above very few women use contraception until they reach their desired family size.

Table 4.1   Percentage of women ever married at specified ages

Age last birthday	Per cent ever-married
< 15	0.0
15	0.8
16	3.1
17	3.0
18	11.4
19	16.0
20	27.9
25	62.7
30	81.7
35	92.1
40	94.5
45	95.5
50	97.3

Source: First Report Table II.2

As shown by table 4.1 marriage is quasi-universal. It is also stable, with 88% of the ever-married women interviewed having been married only once.

Age at first marriage varies considerably between type groups. Even greater differences exist between women with different levels of education. Table 4.2 below shows mean age at marriage by socioeconomic type group and by years of schooling and also separates two different age cohorts in order to show the change over time. The lowest ages at marriage are to be found among the Moors and the Indian Tamils.

Table 4.2   Mean age in years at first marriage, by current age, type groups and years of schooling. Confined to women aged 30-49 years who were married before they were 30

Group	Current age in years	
	30-34	35-39
Type group		
SE 1	22.7	21.8
SE 2	19.2	19.2
SE 3	17.7	17.7
Indian Tamil	17.4	16.8
Moor	16.7	16.0
Years of schooling		
10 or more	24.2	23.7
6-9	20.1	20.2
1-5	18.1	18.2
none	16.7	16.8
All women	19.4	19.1

4.2 Early marital fertility

As can be seen from table 4.3 premarital conception and/or birth is relatively rare. Overall only 2% of women had their first child before marriage; and only a further 6% gave birth within 7 months of marriage. As expected the mean intervals between marriage and first birth by age at marriage make a U-shaped curve, with teenage infecundity making the average interval for those married at less than 17 years higher than that for those married at 18 to 29 years. A comparison of different cohorts (First Report p. 90) showed very little change over time in early marital fertility. An interesting feature of the analysis of this topic in the First Report is that when allowance is made for age at marriage there is very little difference in early marital fertility between different population groups. By 10-19 years of marriage, however, the differences highlighted in section 3.1 above are beginning to make themselves felt. Table 4.4 shows, for women whose first marriage lasted 10-14 years, that the length of the first birth interval is, as one might expect, a good indicator of total fertility within age at marriage groups (this can be seen by comparing the columns of the table).

Table 4.3   Percentage distribution of women according to the interval between first
marriage and first birth, by age at first marriage and by years since
first marriage.   Confined to women who first married at least 5 years ago

Interval from marriage to first birth	Age at marriage (in years)							
	< 15	15-17	18-19	20-21	22-24	25-29	30+	All ages
Negative interval	2	2	1	1	2	2	5	2
0-7 months	6	6	7	6	4	4	1	6
8-11 months	12	18	26	27	28	26	24	22
1 year	36	40	41	40	39	40	32	39
2 years	20	17	14	12	14	11	14	15
3 years	9	7	5	4	5	2	5	6
4 or more years	15	8	6	7	5	7	8	8
No births in first 5 years	2	2	2	3	4	8	12	3
All intervals	100	100	100	100	100	100	100	100
Mean length in months	22.4	19.5	17.3	17.4	17.7	17.1	20.1	18.8
Number of women	760	1437	984	764	661	505	148	5259

Note: The mean is calculated on the basis of women who had a birth in the first 5 years.
Negative intervals are excluded.
Source: First Report Table 2.1.1 and Table 5.9.

Table 4.4   Mean number of children ever born by age at marriage and length of
first birth interval.   Confined to women whose first marriage lasted
10-14 years.   Number of women in brackets.

Age at marriage in years	First birth interval	
	8-17 months	18-35 months
< 15	4.4 (40)	4.1 (47)
15-17	4.5 (118)	4.2 (84)
18-19	4.5 (99)	3.8 (58)
20-21	4.2 (71)	3.8 (34)
22-24	4.0 (76)	3.7 (45)
25-29	3.4 (56)	3.3 (28)
All ages	4.3 (460)	4.0 (296)

It is, however, not possible to conclude anything about completed fertility from a comparison of the different age at marriage cohorts shown in the table because

-    those who married young still have more years "at risk" ahead of them than those that married late;

-    those who married late tend to be the more educated women who are more likely to practice FP in order to limit the size of their families.

The total number of very young married women in the survey was quite small so that direct observations of their fertility are subject to considerable sampling error.   Of the nearly 200 currently married women aged less than 20 years, 40% were nulliparous, 47% had had one live birth and the remaining 13% had had more than one; most of the latter were 18 and 19 years old.

4.3   Risks of early childbirth

The risk of complications at pregnancy and childbirth, including maternal and infant death, is known to be particularly high for very young mothers.   This is reflected in the WFS data with regard to infant mortality.   The infant mortality rate according to mother's age at birth was analysed for all the first births which took place between 10 and 1 year before the survey.   The results, which are summarized in table 4.5, show that infant mortality is highest for the young mothers.   The differential is very marked in the neonatal mortality of babies born to very young mothers.   The differential in post-neonatal mortality, which is less influenced by the biological attributes of the mother and more by the quality of maternal care, is less marked but extends to a higher age - 18 years as against 16 years for neonatal mortality.

Table 4.5   Mortality of children by age of mother.   Confined to first children born between 10 and 1 year before the survey

Age of mother at birth in years	Probability of dying aged:			Number of births
	1 month	1-11 months	1 year	
< 16	.118	.015	.132	76
16-17	.033	.029	.062	211
18-19	.037	.019	.055	380
20-24	.035	.022	.057	848
25-29	.024	.002	.026	420
30-34	.041	-	.041	145
35-39	-	-	-	33
40-49	-	-	-	6
All ages	.035	.020	.054	2118

4.4   Contraception

The mean desired family size of the ever-married women aged less than 20 years was 2.5 children.   It follows therefore that if Sri Lankan women tend to use FP only after achieving their desired family size very few of the under 20s would be using contraception.   Table 4.6 shows the methods ever used by the 129 women who had already had at least one birth.   In all about one-quarter of the women having had at least one live birth were using contraception which is somewhat higher than the proportion of users among all women who want more children.   Of the nulliparous women, only 2 were using contraception to postpone their first birth.

Table 4.6   Distribution of currently married women by current age and by ever-use of any method of contraception.   Confined to women aged less than 20 years who had at least one live birth

Method ever used	Current age in years								All ages
	12	13	14	15	16	17	18	19	
Modern	0	0	0	1	1	1	3	12	18
Traditional	0	0	1	0	1	0	3	10	15
No method	0	1	0	3	7	11	35	39	96
Total	0	1	1	4	9	12	41	61	129

5. INFERTILITY

From the survey data it was possible to estimate the proportion of women who had never had a live birth, i.e., who were infertile, but it was not of course possible to estimate the proportion who were infecund *.

5.1 Primary infertility

As can be seen from table 5.1 below the proportion of infertile women levels off from 44% for those under 20 years old to between 3% and 2% for those over 35 years old who were still married. The decline in the proportion of infertile women is even more marked if analysed by duration of marriage.

Table 5.1   Percentage of ever-married women without children ever born by age and marital status and the number of women in each age/marital status category

| Current age in years | Currently | | | | All | |
| | married | | not married | | | |
	%	Number	%	Number	%	Number
< 20	44	168	–	8	44	176
20-24	20	868	16	44	20	912
25-29	10	1226	10	70	10	1296
30-34	5	1154	9	68	5	1222
35-39	3	1077	9	129	4	1203
40-44	4	815	3	152	4	967
45-49	2	853	8	183	3	1035
All ages	8	6162	8	650	8	6812

From table 5.2 it would seem that very few women who do not give birth in the first 10 years of marriage do so later on. The proportion of infertile women among those married for more than 10 years remains fairly steady at 2%. Contrary to expectation, among the women who are currently not married, i.e., divorced, separated or widowed, the proportion of childless women is not much higher. It is possible, however, that some of the women classed as single – 8% of all women at age 35 and 5% at age 40 (see table 4.1) are in fact divorcees, rejected because of childlessness but not willing to reveal this fact to the interviewer. Such a misclassification would conceal a part of the problem of infertility. No women in the sample were practising contraception in order not to have any children at all.

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* In the demographic sense of the two words. The WHO definition of infertility is approximately the same as the demographer's definition of infecundity.

Table 5.2   Percentage of women without children ever born, by type group and
             years married.

| Years married | Type group | | | | | All |
	SE 1	SE 2	SE 3	Indian Tamil	Moor	
0-4	29	27	31	42	33	30
5-9	7	3	7	8	8	6
10-14	4	2	2	4	1	2
15-19	2	3	2	0	0	2
20-24	1	2	1	-	1	2
25-29	6	1	9	-	2	2
30 or more	-	0	1	-	0	1
All	12	7	7	15	8	8

5.2   Secondary infertility

An estimate of secondary infertility (infertility among women who have had at least one
live birth) can be obtained from the proportion of women who have not given birth to a second
or subsequent child over a given period of time despite being "at risk".   The definition of
"at risk" used here is non-pregnant women who have been continuously married for the past 5
years and are not using contraception.   This last condition is a little suspect as it is
likely that women who know they are not at risk, e.g., know they are not fecund or are not
having sexual intercourse, will be less likely to practise contraception than the rest.

Among those who said they wanted more children, (who had at least one child 5 years ago
and who had been continuously married during the period in question) about one-third did not
have a child in the 5 years preceding the survey, see table 5.3.   For those aged 25 to 34
years, who could be expected to be fecund, the proportion was 25%, and was slightly higher
among those who had only one child (28%) than among those who had 2 or more children (25%).

Table 5.3   Percentage of women who did not give birth to a live child in the
             last 5 years, by parity 5 years ago and current age.   Confined to
             non-pregnant women who had been continuously married for the 5 years
             and who want more children.   Number of women in brackets

| Current age | Parity 5 years ago | | |
	1	2 or higher	All
20-24	7 (46)	- (17)	9 (63
25-29	17 (76)	15 (61)	16 (137)
30-34	44 (54)	29 (69)	36 (123)
35-39	40 (30)	52 (50)	48 (80)
40-44	- (12)	62 (34)	64 (46)
All ages	28 (218)	37 (231)	33 (449)

6. BREASTFEEDING

6.1 Levels and trends

The importance of breastfeeding for the healthy and harmonious development of the infant is increasingly being realized and documented. At the same time, the practice of breastfeeding is declining in many populations due to a variety of factors among them the increased participation of women in the labour force. For this reason, information on the levels and trends in the practice of breastfeeding is of great importance to the health authorities.

The survey data contain information on the duration of breastfeeding for each of the two last-born children of all ever married women. The intention was that by comparing data on the two last children trends over time could be derived and the length of the birth interval could be related to breastfeeding duration. Analysis of the data showed, however, that considering only closed (the penultimate child) or only open (the last child) birth intervals gave incorrect results, since neither group is based on a random sample of children. The last closed interval is biased toward shorter durations of breastfeeding and the open interval to longer durations. Moreover, women who were pregnant were automatically classified as not breastfeeding, which is not always true. The correct way to obtain a non-biased sample is to consider all children born in a given number of years, which is the approach followed here although this also proved difficult to apply post facto given the way the data were collected.

Table 6.1 below shows the pattern of breastfeeding in Sri Lanka based on information relating to all children born between 2 and 4 years preceding the survey who survived to their second birthday. Nearly all children in Sri Lanka begin by being breastfed, only 5% were never so fed or were so fed for less than one month. The mean duration of breastfeeding was about one year, although one-fifth of mothers continued to breastfeed for over two years.

Table 6.1   Percentage of women breastfeeding at least a given number of months by birth order and type group. Confined to last and next to last children who were born between 4 and 2 years before the survey and who survived to their second birthday

| Months	First children	Subsequent children				All children
	All	All*	SE 1	SE 2	SE 3	
0	97	96	97	98	96	96
1	93	96	97	97	95	95
3	70	85	79	88	88	83
6	56	76	63	81	81	74
9	44	69	49	73	77	65
12	31	50	33	52	58	48
18	21	36	22	37	44	35
24	16	21	12	20	28	21
Number of women	318	2133	437	535	925	2451

* includes Indian Tamils and Moors.

Breastfeeding practices varied with socioeconomic and ethnic status. As can be seen
from table 6.2 and Figure 6.1 these differences did not seem to affect whether the child was
ever breastfed, but rather for how long it was fed.   The differences in the proportion of
children being breastfed became apparent by about 6 months of age.   By 12 months, well over
half the children in lowest socioeconomic group still breastfed as against about one-third in
the top group.   The differences in the proportions fed for more than 2 years also show a
distinct socioeconomic gradient as well as a tendency for less prolonged breastfeeding of
first children.   It should be borne in mind, however that the mothers of first children tend
to be younger so the observed differences may only be a reflection of differences due to
mothers' age rather than birth order.

Table 6.2   Percentage of women breastfeeding at least a given number of months by
               whether mother worked away from home.   Confined to last and next to
               last children who were born between 4 and 2 years before the survey and
               who survived to their second birthday

Months	At home	Worked away from home
0	97	95
1	96	93
3	86	76
6	77	66
9	70	57
12	50	44
18	37	35
24	22	22
Never breastfed	3	5
Breastfed less than 3 months	4	7
Breastfed less than 6 months	23	34
Number of women	1868	456

Note: "At home" includes those working at home or on their own farm
as well as those classified as not working.

Figure 6.1   Percentage of women breastfeeding at least a given number of months
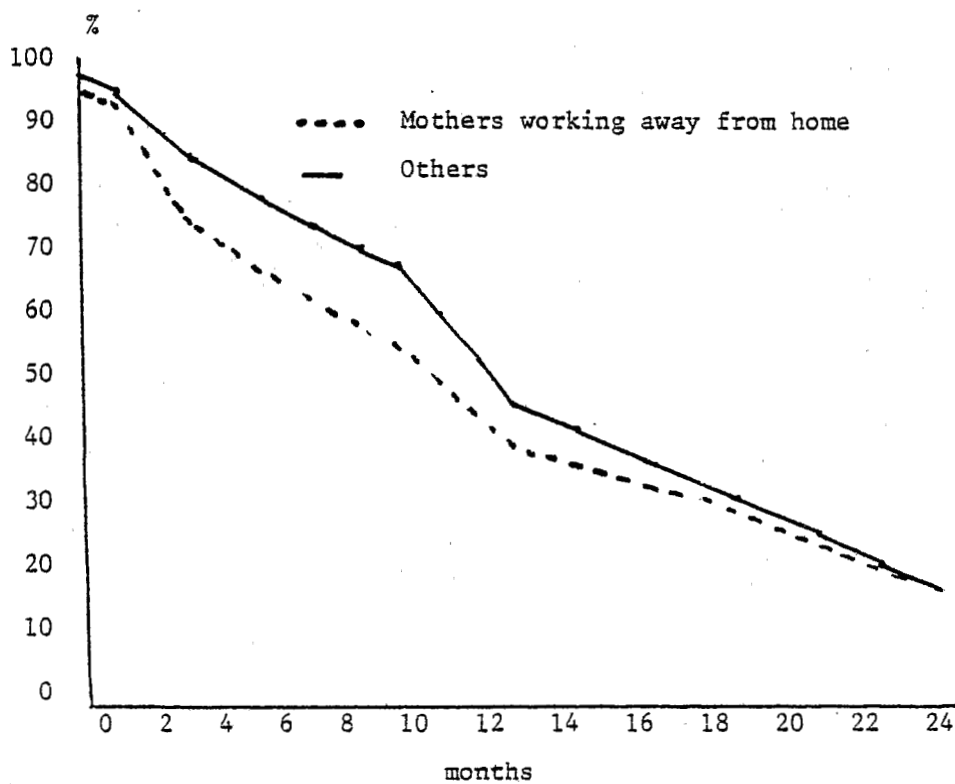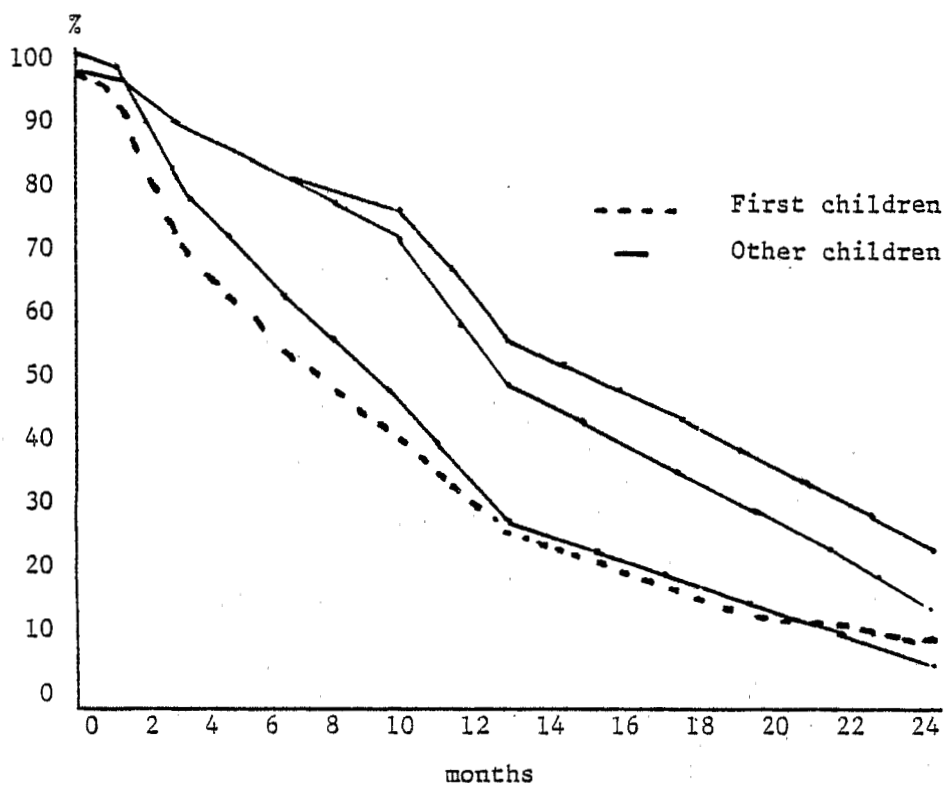
Source: Table 6.1 and 6.2

Patterns of breastfeeding among the two minority groups (not shown separately in table 6.1) were very similar to those of SE 3. The only striking difference is the relatively high proportion (12%) of Indian Tamil mothers who never breastfed at all. As the majority of women in this group live on the Estates, this phenomenon probably reflects their working conditions and possibly their health status.

Table 6.2 above shows the duration of breastfeeding separately for those mothers who worked away from home and for those who either worked at home, on the family farm or were classified as "not working". The differences are not as great as might be expected. Working away from home tended to shorten the period of breastfeeding but only increased the proportion who never breastfed marginally. It must be noted, however, that "work status" relates to the status at the time of interview which is not necessarily the same as work status at the time of birth.

Prolonged breastfeeding was most common in rural areas where nearly half the children were so fed for 18 months or more.

When the analysis was confined to women with a closed birth interval of 32 months or more whose child lived for at least 2 years and who breastfed for 2 years or less (to eliminate the bias due to infant death and breastfeeding terminated by a new pregnancy) very distinct patterns in the average length of breastfeeding emerged. These are summarized in table 6.3.

Table 6.3   Mean length (in months) of breastfeeding in the last closed interval among women who breastfed for 2 years or less, by background and other variables. Confined to women whose child survived at least 2 years and whose last closed interval exceeded 32 months

Type and place of residence:

Urban	Rural	Estate
11.9	15.2	15.8

Level of education:

None	1-5 years	6-9 years	10 or more years
16.2	15.2	12.5	10.1

Religion:

Budhist	Hindu	Muslim	Christian
14.0	15.0	15.5	12.5

Ethnic group:

Sinhalese	Sri Lanka Tamil	Indian Tamil	Sri Lanka Moor
13.8	14.7	15.2	15.7

Birth order:

1	2	3	4+
12.8	13.1	13.8	15.3

Current age in years:

25	25-34	35-44	45+
15.7	13.9	13.7	15.0

Overall mean = 14.2

Source: First Report Tables 7.12 and 4.1.3 to 5.

Whilst it is not possible to gain an insight into changes over time in breastfeeding patterns by comparing the closed with the open interval, it is possible to compare the breastfeeding experience of different cohorts by their age at the penultimate child's birth, see table 6.4 below. From this table it is evident that there is a trend toward shorter breastfeeding over time (compare the diagonals).

Table 6.4   Mean length (in months) of breastfeeding in the last closed interval, by current age of mother and by her age at the birth of the child in question

Mother's age in years at birth of child	Mother's current age in years					
	< 20	20-24	25-29	30-34	35-39	40+
< 20	11.4	14.5	18.1	15.4	31.5	22.0
20-24		12.7	14.9	18.2	17.5	18.2
25-29			12.1	15.1	16.0	18.1
30-34				13.9	16.8	17.9
35-39					11.2	16.0
40+						17.4

6.2   Other aspects of breastfeeding

In addition to information on the levels and trends of breastfeeding, the survey data yield some insights also into other aspects of breastfeeding. These are discussed only briefly below, since the relative weakness of the data calls for caution in their interpretation.

The contraceptive effect of breastfeeding is known to depend, to a large extent, on the intensity of the feeding. When the child begins to get supplementary foods, and breastfeeding becomes less frequent, ovulation/menstruation is resumed and the woman is at risk of becoming pregnant again. Unfortunately there are no data on full or partial feeding, nor on the length of post-partum amenorrhoea, so that all inferences on this relationship must be indirect.

A comparison of the length of birth interval with the length of breastfeeding shows no obvious relationship for breastfeeding durations below 24 months. The very long durations are associated with very long intervals but it is quite possible that breastfeeding was prolonged because no new pregnancy intervened (N.B. also that by definition pregnant women are deemed not to be breastfeeding).

A more sophisticated (multivariate) analysis (Jain and Bongaarts 1980) showed that on average one month of breastfeeding adds about 0.7 months to the birth interval. (This is the net effect of breastfeeding after adjusting for the effects of seven other demographic and social factors.) On average breastfeeding was found to add (in Sri Lanka) 10.6 months to the birth interval, whereas the use of contraception only added 0.9 months. The median duration of post-partum amenorrhoea was estimated at 14.0 months in the open interval and 10.1 months in the closed interval. Of the latter 8.5 months were deemed to be due to breastfeeding.

Over one-third of lactating women were currently using some method of contraception. The relatively low usage level in SE 1 is probably due to the lower average parity in that group which is reflected in a higher proportion of women desiring more children (see section 3.2.2). Overall 2% of all lactating women were taking oral contraceptives, which may pose a health hazard to the child. (See table 6.5.)

Table 6.5   Current contraceptive use by lactating women, by method and type group, compared to current use by non-pregnant non-lactating fertile exposed women

Lactating women:	Method currently used					Number of women
	Sterili- zation	Pill	Other modern	Traditional	None	
Type group						
SE 1	9	2	10	22	57	427
SE 2	15	2	13	18	52	473
SE 3	14	1	7	11	67	741
Indian Tamil	11	2	3	4	80	165
Moor	4	3	2	6	85	100
All lactating women	12	2	9	14	63	1906
Non-lactating women	16	2	11	20	50	2500

Finally, it was noted that the mean duration of breastfeeding in the last closed interval was practically independent of the use of contraception in that interval; the mean was 16.2 months for 1065 users and 16.4 months for 4279 non-users.

6.3   Implications of the findings

By and large the practice of breastfeeding is widespread and prolonged and very few infants are never breastfed. There were only very slight signs in the survey findings that there may be a trend towards shorter breastfeeding among the urban, better educated groups, and among younger women generally. This is a trend that may need watching but as yet is no cause for alarm. It would no doubt be of interest to health workers in less fortunate countries to know how Sri Lanka has managed to keep this practice intact. If the work status data are to be trusted it is particularly noteworthy that even women working away from home manage to breastfeed successfully.

7. INFANT AND CHILD MORTALITY

Retrospective data on infant and child mortality are always subject to error, e.g., recall errors, and the Sri Lanka survey data are no exception, especially since mortality studies were not of high priority for the survey. Furthermore, analysis is made difficult by lack of precise age at death. The ages were grouped: 0 months; 1-2 months; 3-5 months; 6-11 months; 1 year; 2-4 years.

7.1 Levels and trends

Probabilities of death, i.e., the number of declared deaths divided by the number of live births, for the eight youngest cohorts are shown in table 7.1 below.

Table 7.1.a   Probability of dying, by cohort and sex (per 1000 live births).
             Neonatal and post-neonatal mortality

Year of birth	Probability of dying aged					
	less than 1 month			1 to 11 months		
	M	F	Both	M	F	Both
1966	60	25	42	28	27	28
1967	39	25	32	17	31	24
1968	39	33	36	8	16	13
1969	41	38	39	36	20	26
1970	35	25	30	27	29	29
1971	48	22	36	21	12	17
1972	35	25	31	25	15	20
1973	41	33	37	17	20	19
1966-69	44	30	38	22	24	22
1970-73	40	26	33	23	19	22

Table 7.1.b   Probability of dying, by cohort and sex (per 1000 live births).
              Infant and child mortality

Year of birth	Probability of dying aged					
	less than 1 year			1 to 4 years		
	M	F	Both	M	F	Both
1966	86	51	69	20	22	22
1967	55	55	55	30	9	21
1968	47	49	49	21	31	26
1969	75	57	65	15	30	22
1970	61	54	58	23	33	28
1971	69	34	52	12	38	25
1972	60	40	50	22	21	22
1973	57	52	56	10	21	15
1966–69	65	53	58	23	23	23
1970–73	62	45	54	17	28	23

The effect of the recrudescence of malaria was seen strongly in 1969 and 1970.   These
fluctuations tend to obscure the trend in the last decade. However a comparison of the
cohorts 1970/73 with those of 1966/69 shows a definite decline and a comparison of the
cohorts 1970/73 with all the birth cohorts covered by the survey – twenty years or more –
shows a decline of about 10% in mortality under 1 year and 15% in mortality under 5 years.
This is in agreement with results from elsewhere which show that in a period of declining
infant and child mortality, child mortality declines faster than infant mortality. For
infant mortality the difference between the sexes is in line with that found in other
countries but for death rates at ages 1 to 4 the ratio switches and more girls than boys die,
presumably reflecting preferential care given to boys. Moreover whilst nearly all the other
rates fell between 1966/69 and 1970/73 that for girls aged 1 to 4 years rose by over 20%.

The rates are somewhat higher than the official estimates of infant mortality possibly
reflecting some degree of underregistration.

	Registrar General	WFS
1966–70	51	59
1971–73	46	53

7.2   Infant mortality differentials

Although the overall level of infant mortality was relatively low in Sri Lanka when
compared with other countries of the region, the survey data revealed quite considerable
differences within the country, as can be seen from table 7.2 below which shows mortality
rates by type groups. The three socioeconomic groups show the expected gradient, but the
really startling feature is the higher rates among the Indian Tamils and the very much higher
rate for the Moors. This last is double that for the lowest socioeconomic group and is
particularly high in the post-neonatal period.

Table 7.2   Probability of dying (deaths per 1000 live births) by type group.
             Confined to children born 10 to 1 year before the survey

Group	Probability of dying aged		
	less than 1 month	1 to 11 months	less than 1 year
SE 1	19	9	28
SE 2	34	18	51
SE 3	43	26	68
Indian Tamil	43	69	108
Moor	34	33	66
All children	36	21	56

7.3   Birth interval and infant mortality

The data shown in table 7.3 below show a clear relationship between the length of the birth interval and infant mortality of both children.   As regards the last born child – the one born at the end of the interval – an interval inferior to 18 months resulted in an excess mortality of about 50% when compared with intervals of two years or more.

An even more dramatic difference is evident in the mortality rates for the child born before the interval, but this is very likely due to the fact that the birth interval following the death of a child is usually lower because of that death (lack of breastfeeding, replacement effect).

Table 7.3   Infant mortality rates (per 1000 live births), by length of last
             closed interval, for the child preceding the interval and that
             following the interval

Length of last closed birth interval	Child preceding interval	Child following interval
< 18 months	153	64
18–23 months	73	56
24–35 months	45	47
36–47 months	54	44

7.4   Infant mortality and age/parity of mother

Among the variables known to influence the survival chances of the newborn are the age and parity of the mother.   These relationships were investigated in the Sri Lanka data and in order to reduce various sources of error, the analysis was limited to the cohorts born 10 to 1 year before the survey.

Table 7.4   Percentage of births (%) and neonatal (NN) and post-neonatal (PNN) mortality rates by age of mother at birth and birth rank.   Confined to births 10 to 1 year before survey

Birth rank	Age of mother at birth in years														
	20			20-24			25-34			35+			All ages		
	%	NN	PNN	%	NN	PNN	%	NN	PNN	%	NN	PNN	%	NN	PNN
1	6	48	23	8	37	22	6	33	4	0	–	–	20	40	17
2	3	37	25	8	34	37	6	26	8	1	52	–	18	33	23
3 and 4	1	109	–	9	23	26	15	34	18	1	46	15	26	35	20
5 and 6	0	–	–	2	44	51	13	22	30	4	69	11	19	33	29
7 and higher	0	–	–	0	–	–	8	30	36	9	53	19	17	41	27
All	10	51	24	27	32	30	48	29	21	15	55	16	100	36	23

     The distribution of births on the age/parity grid, as it appears in the first columns of table 7.4 and in figure 7.1 was relatively favourable in Sri Lanka.   Three-fourths of the births were in the biologically favourable ages 20-34 and two-thirds were of birth rank 1-4.   As already discussed in section 4 above, there were few births in the high risk group of very young mothers or of young/high parity mothers.   However, an appreciable proportion of the births, about 23%, were in the high risk group of age 35+ and of high parity.

     The data on mortality, neonatal and post-neonatal respectivively, in table 7.4 follow the pattern known from many other studies, with the high risk zones located in the extreme age-groups and at high parity.   The differentials in infant mortality in Sri Lanka seem, however, to be less pronounced than usually found elsewhere, possibly as a result of the relatively well developed system of social support and health care.   Nevertheless, if the above-mentioned 23% high risk births could be avoided, or shifted to more favourable zones on the age/parity grid, this would reduce the overall infant mortality rate by about 5 per thousand.   Since the great majority of these high risk births are exactly those which were unwanted (see section 3.2.3) and associated with a failure or unwillingness to use modern contraception, the policy implications discussed in section 3.3 above are further strengthened.

Figure 7.1   Relative distribution of births in 1965-1974, by age and parity of mother
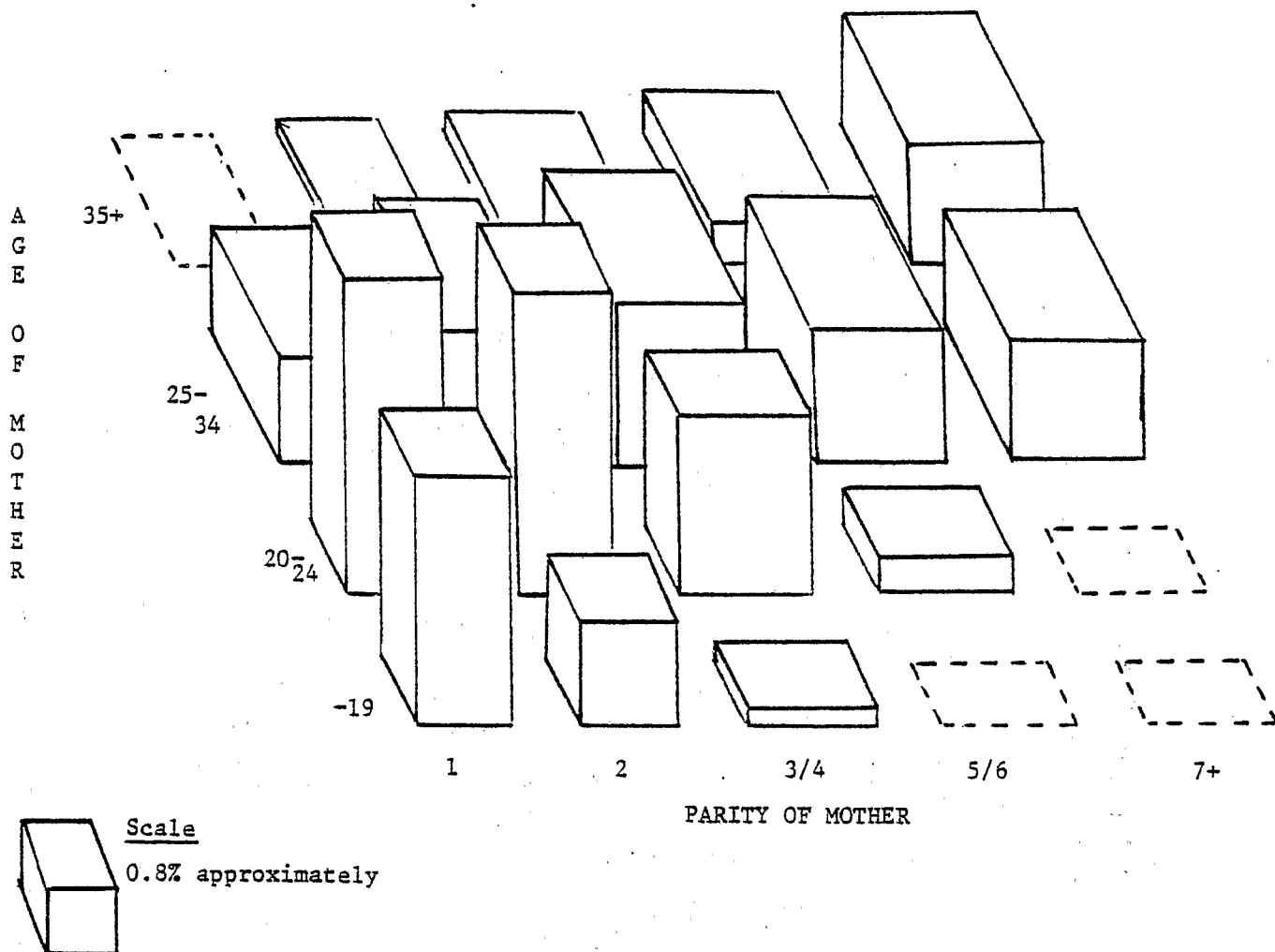
Scale
0.8% approximately

Percentage distribution of women according to attained parity.
Confined to ever-married women currently aged 45 to 49 years.

Parity	Percentage of women
0	3
1	5
2	8
3	7
4	9
5	10
6	14
7	11
8	10
9	10
10	6
11	4
12 or more	3
All women	100

Appendix Table 2

Mean parity of ever-married women by current age, type group and number of years of schooling.

Group	Current age in years						All
	20-24	25-29	30-34	35-39	40-44	45-49	
Type Group:							
SE 1	1.3	1.9	2.7	3.4	3.9	4.9	2.8
SE 2	1.4	2.6	3.7	4.8	5.3	5.8	3.9
SE 3	1.8	2.8	4.7	5.8	6.1	6.4	4.9
Indian Tamil	1.2	2.7	3.8	4.6	5.7	5.3	3.7
Moor	2.1	3.9	5.0	6.2	7.6	6.6	5.0
Years of schooling:							
10 or more	1.0	1.6	2.3	3.0	3.5	4.2	2.4
6-9	1.9	3.0	4.7	6.0	6.5	6.4	5.2
1-5	1.6	3.0	4.3	5.2	5.7	6.0	4.3
none	1.4	2.3	3.4	4.5	4.7	5.5	3.4
All women	1.5	2.5	3.8	4.9	5.5	5.9	3.5

Appendix Table 3

Parity progression ratios for women aged 40-44 years and those aged
45-49 years

Parity	Current age in years	
	40-44	45-49
0	958	970
1	945	943
2	914	916
3	874	911
4	846	885
5	829	850
6	717	761
7	665	742
8	654	699
9	660	543

Note: Parity progression ratio at parity x is the number of
women who went on to parity $(x + 1)$ divided by the number of
women who reached parity x and multiplied by 1000.

Appendix Table 4

Parity progression ratios by type group for women aged 45-49 years

Parity	Socioeconomic groups			Indian Tamil	Moor	All women
	1	2	3			
0	969	973	969	939	1000	970
1	916	961	949	948	936	943
2	866	918	948	836	886	916
3	894	897	931	885	872	911
4	809	881	904	907	941	885
5	764	836	874	796	906	850
6	662	730	797	718		761
7	600	639	810			742
8		667	706			699
9			528			543

Note: See footnote of Appendix Table 3

Parity progression ratios by educational level for women aged 45-49 years

Parity	Years of schooling				All women
	10 or more	6-9	1-5	none	
0	966	944	951	981	970
1	930	988	958	935	943
2	755	875	938	937	916
3	825	925	913	913	911
4	788	853	889	912	885
5	731	819	842	873	850
6	579	663	792	784	761
7		571	702	843	742
8		528	712	760	699
9			555	509	543

Note: See footnote of Appendix Table 3.

Appendix Table 6

Percentage of exposed women who are not currently using a modern method of contraception by age and number of living children. Confined to women who want no more children.

Current age in years	Number of living children										All
	0	1	2	3	4	5	6	7	8	9 or more	
< 15	-	-	-	-	-	-	-	-	-	-	-
15-19	-	-	-	-	-	-	-	-	-	-	-
20-24	-	72	74	47	68	-	-	-	-	-	65
25-29	-	77	76	57	61	51	62	-	-	-	62
30-34	-	86	68	69	56	44	53	53	57	73	59
35-39	-	91	70	67	61	60	60	61	65	58	64
40-44	-	80	83	78	74	70	64	69	73	61	72
45-49	-	100	90	96	96	84	73	78	76	71	82
All women	-	85	75	65	65	59	63	65	69	64	66

Note: Cells with too few women are not calculated.

Appendix Table 7

Age-specific marital fertility rates (births per thousand exposed women) for users versus non-users of contraception according to whether they do or do not want more children.   Confined to births in the two years preceding the survey and to women married at least 2 years

Age in years	Wants more children		Wants no more children	
	User	Non-user	User	Non-user
20	-	587		
20-24	310	455	341	639
25-34	245	354	247	364
35 or more	180	94	75	103
All ages	262	348	161	229

= = = =