CONTINUATION AND RETENTION RATE SURVEY-1985 SRI LANKA

FAMILY HEALTH BUREAU
MINISTRY OF HEALTH

CONTINUATION AND RETENTION RATE SURVEY
SRI LANKA - 1985

Evaluation Unit,
Family Health Bureau,
231, De Saram Place,
Colombo-10.
SRI LANKA.

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CONTINUATION AND RETENTION RATE SURVEY

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PREFACE

This is a third in a series of Continuation and Retention Rate Surveys conducted by the Family Health Bureau. The results of the first and second surveys conducted in 1977 and 1979 had not been published though some of the results were used for purpose of programme evaluation.

The present survey deals with the pattern of use of the oral pill and the IUCD. A study on the continuation rates of the injectable contraceptive (DMPA) has been deferred till 1988, since this method was available islandwide only since 1985.

The results of this survey and the conclusions derived are most timely in view of the concerns being expressed in Sri Lanka regarding the level of use of the temporary modern methods of contraception.

I am sure the findings of this study would not only be of use to us in Sri Lanka, but also would be of interest to programme managers of other countries.

Family Health Bureau,
231, De Saram Place,
Colombo 10.

Dr. N.W. Vidyasagara
Director (Maternal and Child Health)
Ministry of Health.

ACKNOWLEDGEMENT

Several institutions and personnel contributed to the successful implementation of the Continuation and Retention Rates Study conducted by the Family Health Bureau during 1984/85.

Our thanks are due to the UNFPA for funding the study and to Dr. K.H. Notaney - WHO Programme Coordinator and Representative in Sri Lanka for the valuable assistance provided during different stages of the study.

I wish to thank Dr. S.D.M. Fernando, Director General of Health Services and Dr. M. Rodrigo Deputy Director Public Health Services for their encouragement and cooperation extended during the study.

A very special word of thanks is extended to Dr. N.W. Vidyasagara Director(MCH) for the administrative support and technical expertise provided throughout the study.

Officers of the Medical/Health Institutions and the Public Health Midwives Areas that were selected for the study extended their fullest cooperation during the sample selection. I wish to thank all those officers who helped the study team in numerous ways during sample selection.

The members of the study team deserve a special commendation for their untiring efforts and their expertise provided without which it would not have been possible to conduct this study. I must also specially commend the interviewers (Public Health Midwives) who had the difficult task of carrying through the interviews often undergoing considerable personal hardship.

Last but not least I extend my gratitude and thanks to the respondents of the study for their cooperation and to all others who directly or indirectly participated or contributed to various activities connected with the survey.

Dr. K.P. Wickramasuriya
Project Manager

Evaluation Unit,
Family Health Bureau,
231, De Saram Place,
Colombo 10.

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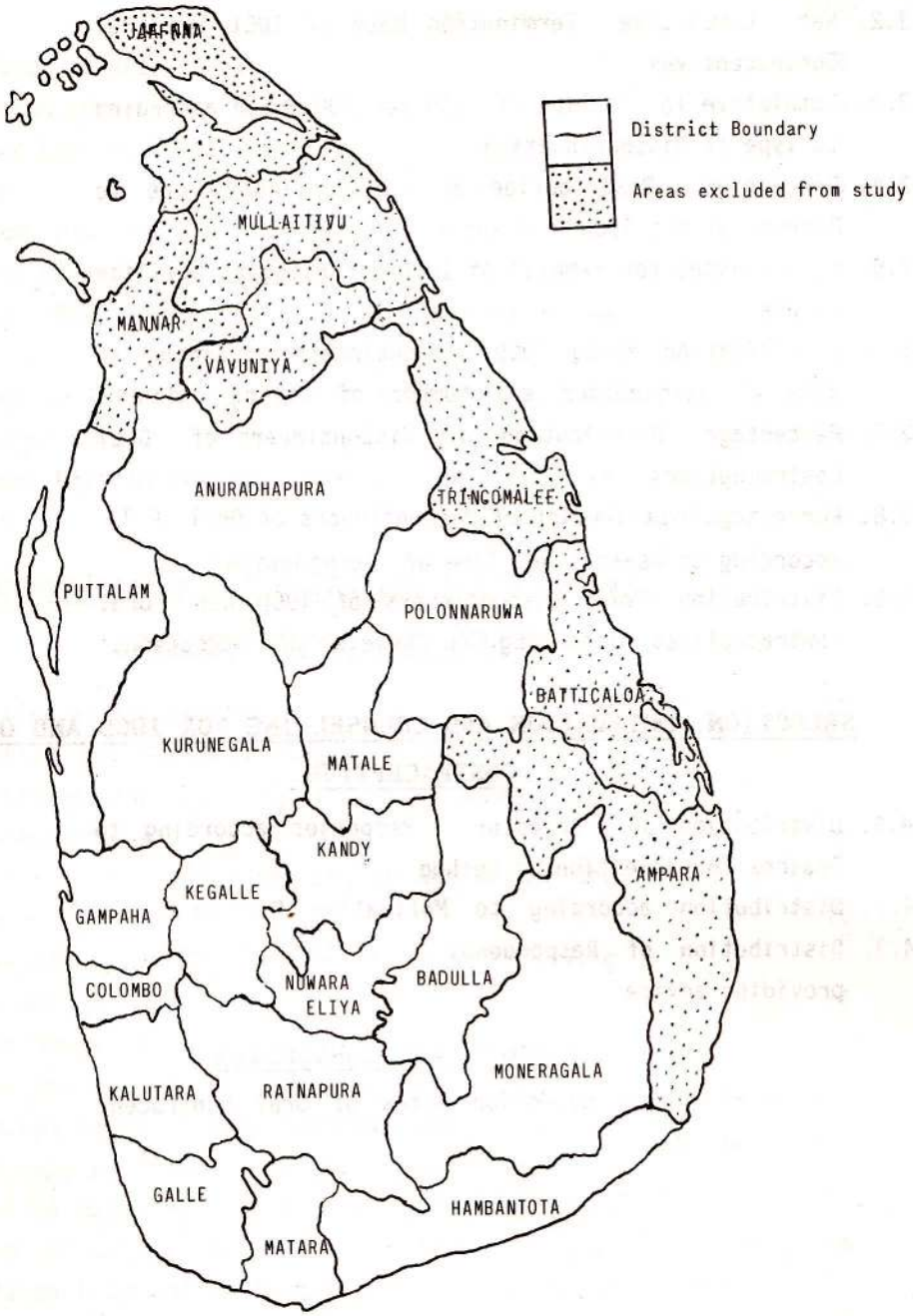

CHAPTER I

THE STUDY

Routine family planning statistics in Sri Lanka provides data only on New Acceptors of family planning by method. Information on the duration of use of Temporary Modern Methods is not provided for within the routine reporting system. Some studies in this field were undertaken in Sri Lanka many years ago, but thereafter very little information is available on continued use of Temporary Modern Methods of Contraception.

The last study on this subject was undertaken by the Family Health Bureau in 1979 but the findings had not been published though some of the results were used for evaluating service performance.

The present study provides data on the duration of use of the Intra Uterine Contraceptive Device (IUCD) and Oral Contraceptive. In addition, the study has also collected information on certain socio-demographic characteristics of users of these methods and the main reasons for discontinuation.

METHODOLOGY

The sample was selected from acceptors of IUCD and Oral Contraceptives during the period - 1st of January 1982 to 31st of July 1984. A multistage technique based on probability proportionate to size, was adopted for selection of the sampling units.

SELECTION OF SAMPLE

The sample was selected based on a stratified 3 stage design.

1st Stage : The country was stratified into co-strata according to provinces. Of the 9 provinces, the Northern and Eastern provinces were excluded due to operational constraints in data collection as a result of the recent disturbances in the country. The study was therefore limited to the other 7 provinces of the country.

Within each province the Health Divisions[1] were grouped together and the total number of new acceptors of IUCD and orals listed according to Health Division. Based on probability proportionate to size, the Health Divisions as first stage sampling units were selected using random number tables.

2nd Stage : The number of new acceptors of IUCD were stratified according to the IUCD clinic centres within the selected Health Division. Only those clinics which had reported a minimum of 15 IUCD cases each year during the study period were included in the sampling frame. Two IUCD clinic centres from each of the Health Divisions were then selected based on probability proportionate to size - providing the secondary sampling unit.

Each Health Division is divided into Health Areas. The Health Areas that corresponded to the IUCD clinic centres became the secondary sampling units for the selection of acceptors of oral contraceptives. This procedure was adopted to overcome certain operational constraints during data collection.

3rd Stage : From each IUCD clinic centre, the sample was drawn from among the IUCD acceptors recruited between 1st January 1982 to 31st July 1984. The sample was selected based on systematic sampling to obtain 15 cases for each year. The F.P. Records for each year maintained at each of the selected clinic centres were used for this purpose.

Each Health Area is subdivided into Public Health Midwife areas. For oral contraceptive users, the secondary sampling units were the Public Health Midwife (PHM) areas within the MOH areas. Three PHM areas were randomly selected from each of the

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1. The Seven Provinces are divided into 15 Health Divisions each in charge of a Regional Director of Health Services (RDHS).

selected Health Areas and five acceptors of orals were selected for each study year using systematic selection with a random start for the period of study. The family planning records of the PHM were used as the sampling frame.

The same procedure was adopted for selection of the sample from the Family Planning Association of Sri Lanka.

SAMPLE SIZE

Using the above sampling procedure, a total of 810 acceptors were selected for each method, so that a minimum of 500 respondents for each method could be located.

During field operations, 552 acceptors of IUCD and 507 acceptors of orals were located and relevant data collected.

TABLE 1:1

Distribution of Respondents

	IUCD	Oral Contraceptives
Number of Acceptors selected	810	810
Number Interviewed	552	507
Number lost to follow up	258	303
Coverage	68.1%	62.6%

The main reasons for loss to follow up are illustrated in Table 1.2.

TABLE 1.2

Main Reasons for Loss to Follow up

Reasons	IUCD		Oral Contraceptive	
	Number	%	Number	%
Incorrect Address	18	7.0	-	-
Not residing in the area	91	35.3	128	42.2
Could not be contacted at time of survey	91	35.3	100	33.0
Left the country	50	19.4	26	8.6
Other reasons	08	3.0	49	16.2
Total	258	100.0	303	100.0

DATA COLLECTION

Data was collected in the homes of the respondents, by six trained Public Health Midwives (PHMs), using a structured questionnaire. The PHM teams were given a 4 day-training at the Family Health Bureau on administering the questionnaire and their ability was pre-tested prior to commencement of field operations.

The teams were provided with transport and their work was programmed to cover the selected areas according to a pre-arranged schedule. Periodic supervision and guidance was available throughout the survey by the staff of the Evaluation Unit at the Family Health Bureau.

Data collection commenced in mid November 1984 and continued for a period of three months. In the case of respondents who were still using the IUCD at the time of the survey, a vaginal examination was performed by the team members to confirm the presence of the IUCD.

QUESTIONNAIRE DESIGN

A pre-coded questionnaire was used for data collection and information was collected in respect of:

i) Socio Demographic Characteristics of Respondents
ii) Period of use of Contraceptive Method
iii) Reasons for Accepting the Method
iv) Reasons for discontinuation of method
v) Side-effects
vi) Follow up visits

DATA PROCESSING

The completed interview schedules were edited and coded at the Family Health Bureau according to pre-determined editing specifications and coding procedures.

Data was processed using electronic data processing equipment (ICL Micro Processor - Model 8120/12) at the Family Health Bureau with software developed by the Evaluation Unit.

Thereafter data was analysed using applications based on life table techniques and statistical methods.

THE SAMPLE POPULATION

In this study the sample consisted of married women in the age group 15 - 49 years who had accepted either the IUCD or Oral Pill as a method of contraception during the time frame 1st January 1982 to 31st July 1984. A total of 552 and 507 acceptors of the IUCD and Oral Pill respectively were interviewed and their socio-demographic characteristics analysed.

These characteristics were compared with the corresponding characteristics of all new acceptors recruited by the national programme during 1983 in order to establish representativeness of the selected sample.

TABLE 1.3

Percentage Distribution of Sample According to Age Group

Age Group	IUCD Acceptors		Oral Pill Acceptors	
	Sample	Total Acceptors for 1983	Sample	Total Acceptors for 1983
15 - 19	2.5	6.3	2.3	5.5
20 - 24	31.4	38.0	31.2	35.0
25 - 29	28.4	28.9	30.8	32.3
30 - 34	21.3	17.2	22.5	18.6
35 - 39	11.4	6.9	10.5	6.6
40 - 44	4.8	1.9	2.7	1.5
45 - 49	0.2	0.4	-	0.3
Unspecified	-	0.4	-	0.2
Total	100.0	100.0	100.0	100.0
Total number of Acceptors	552	16,328	507	33,821

The majority of respondents of both methods were in the age groups 20-24 and 25-29 years. 59.8% of the IUCD and 62.0% of oral pill acceptors were from these age groups. This is illustrated in Table 1.3.

It is worthy of note that the acceptors of oral pill and IUCD recruited by the National Programme had a similar pattern of socio demographic characteristics as the study sample. Table 1.4. illustrates the sample distribution according to the number of living children.

TABLE 1.4

Percentage Distribution of Sample According to the Number of Living Children

Number of Living Children	IUCD Acceptors		Oral Pill Acceptors	
	Sample	Total Acceptors for 1983	Sample	Total Acceptors for 1983
1	19.7	28.2	23.7	31.0
2	39.1	36.6	31.9	32.4
3	23.8	19.4	23.9	17.9
4	9.6	8.6	10.3	8.8
5	3.9	3.5	5.2	4.3
6 & above	3.9	3.1	5.0	4.1
Unspecified	-	0.6	-	1.5
Total	100.0	100.0	100.0	100.0
Total Number of Acceptors	552	16,328	507	33,821

The proportion of study respondents when categorised according to the number of living children, showed a certain variation (within individual categories) from those of the total acceptors recruited during 1983. However when grouped under two broad categories namely three or less than 3 children and four or more than 4 children, the sample proportions were similar to that of the total acceptors recruited by the programme during 1983.

Table 1.5 illustrates the sample distribution according to educational level.

TABLE 1.5

Percentage Distribution of Samples according to Education

Level of Education	IUCD Acceptors		Oral Pill Acceptors	
	Sample	Total Acceptors for 1984*	Sample	Total Acceptors for 1984*
No Schooling	4.0	2.9	5.7	2.4
Grades 1-5	32.1	23.6	26.6	26.1
Grades 6-9	44.5	45.7	42.1	51.5
GCE 'O' Level	17.1	20.6	22.4	16.2
GCE 'A' Level and above	2.3	2.0	3.2	1.0
Unspecified	-	5.2	-	2.8
Total	100.0	100.0	100.0	100.0
Total Number of Acceptors	552	16,140	507	32,895

* Data on New Acceptors recruited by the National Programme according to level of education is available only after 1984.

4.0% of IUCD and 5.7% of oral pill acceptors in the selected sample had not been to school. The majority of the respondents had either primary or secondary level education. 76.6% of IUCD and 68.7% of Oral Pill acceptors were in this group. A similar pattern in the levels of Education was seen among acceptors of IUCD and Oral Pills recruited by the programme during 1984.

The similarities between the selected sample and total acceptors recruited by the national programme would indicate a reasonable representativeness of the sample and the study population.

GENERAL CHARACTERISTICS OF THE SAMPLE POPULATION

Distribution of respondents according to type of employment is illustrated in Table 1.6.

TABLE 1.6.

Percentage Distribution of Sample according to Type of Employment

Employment	IUCD Acceptors	Oral Pill Acceptors
Not employed (housewife)	87.5	89.3
Casual labourers	5.9	2.5
Labourers	0.9	0.8
Owner cultivators	0.9	1.7
Estate worker	-	0.2
Office worker	0.7	0.4
Professionals/ Technicians	-	-
Others	4.1	5.1
Total	100.0	100.0
Total number of Acceptors	552	507

Majority of the respondents were not employed at the time of the survey, the proportions being 87.5% for IUCD and 89.3% for Oral Pill acceptors. Casual labourers accounted for 5.9% of IUCD and 2.5% of oral pill acceptors. The other employment categories were almost negligible.

TABLE 1.7

Percentage Distribution of the Sample according to Ethnicity

Ethnicity	IUCD Acceptors		Oral Pill Acceptors	
	Sample	Total Acceptors for 1983	Sample	Total Acceptors for 1983
Sinhalese	96.1	90.7	96.6	87.4
Sri Lankan Tamils	0.5	5.8	1.3	6.1
Indian Tamils	0.0	0.5	0.0	0.3
Moors	3.2	2.8	1.1	5.7
Others	0.2	0.2	1.0	0.5
Total	100.0	100.0	100.0	100.0
Total Number of Acceptors	552	16,328	507	33,821

Distribution of respondents according to ethnicity illustrated that 96.1% of IUCD acceptors and 96.6% of oral pill acceptors were Sinhalese. Sri Lanka Tamils comprised 0.5% of IUCD and 1.3% of Oral Pill acceptors while Moors accounted for 3.2 and 1.1% of IUCD and oral pill acceptors respectively.

The sample is observed to be predominantly Sinhalese. This may be due to the exclusion of the Northern and Eastern provinces from the survey where the minority ethnic groups predominantly live. However the proportion of new acceptors of IUCD and Oral pills recruited by the National Programme during 1983 and the proportion of IUCD and Oral Pill acceptors in the study have shown a similar ethnic composition.

CHAPTER 2

CONTINUATION AND RETENTION RATES OF ORAL CONTRACEPTIVES AND IUCD

In this study the ordinal month was obtained by subtracting the date of commencement of the method (IUCD or Pill) from the date of termination or from the 'cut off' date which-ever was earlier. The cut-off date for the study was taken as 31st July 1984. Also the analysis of data has been limited to the first segment of use. This consisted of the interval between the commencement of the method and the first termination or the commencement of the method and the cut-off date whichever was earlier.

This chapter deals with continuation and retention rates of oral contraceptives and IUCD. A sample of 810 IUCD acceptors and 810 oral pill acceptors were selected for the study. Of the total sample 552 IUCD acceptors and 507 pill acceptors were identified in the field and the relevant information was collected.

TABLE 2.1.

Distribution of Respondents

Respondents	IUCD	Pill
Total Respondents	552	507
Number using at time of survey	383	248
Number of cases where vaginal examinations were performed	301	

At the time of data collection 383 respondents were still using the IUCD and 248 were continuing to use the pill. The use of the IUCD atthe time of the survey was checked by a vaginal examination and confirmation was obtained in respect of 78.6% of IUCD users. Respondents showing a negative result at vaginal examination were referred to the F.P. clinic for further follow-up.

Table 2.2 illustrates the continuation and retention rates for oral contraceptives and the IUCD per 100 acceptors using life table procedures. In constructing the life table for calculation of continuation and retention rates, the multiple decrement method was adopted. Details of the method are described in appendix I. The results obtained by the use of this method has been checked with the life table technique developed by Dr. Christopher Tietze and the results were found to be identical.

TABLE 2.2.

Continuation and Retention Rates for Oral Contraceptives and IUCD by Ordinal Months after commencement of use

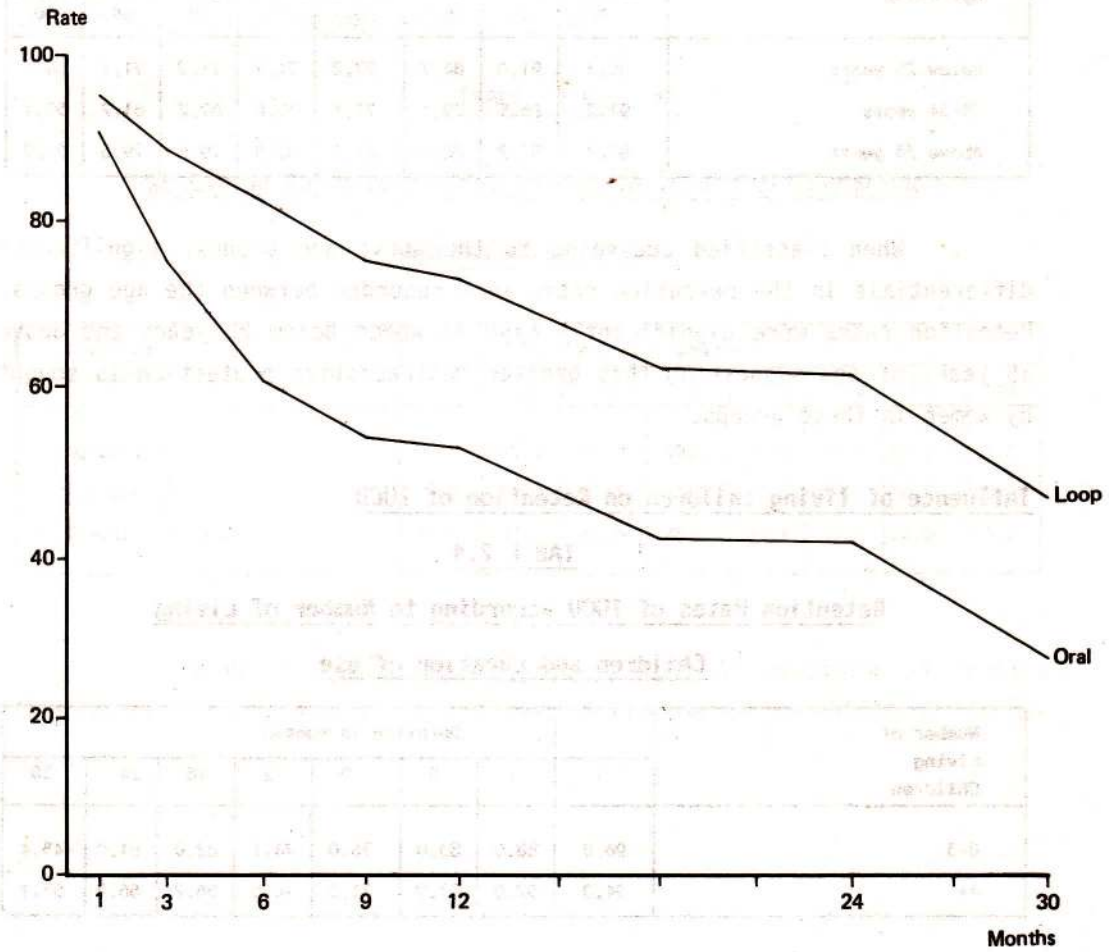
Ordinal Months after Commencement of use	Continuation and Retention Rates	
	Oral Contraceptive	IUCD
1	91.0	95.3
3	75.1	88.9
6	60.6	82.5
9	54.2	75.6
12	52.9	73.3
15	43.3	62.3
18	42.9	62.3
21	42.3	61.7
24	42.3	61.7
27	27.6	47.7
30	27.6	47.7

The study revealed that the IUCD had a higher rate of continuation than the oral contraceptive.

Both the Oral Contraceptive and the IUCD showed the fastest decline during the first three months recording continuation/retention rates of 75.1% and 88.9% respectively at the end of three months. Thereafter both methods showed a slower decline with continuation rates of 52.9% and 73.3% for Oral Contraceptives and IUCD respectively at the end of 1 year. The continuation rate for oral contraceptives after 2 years dropped to low level of 27.6% while the retention rate for IUCD remained at 47.7%.

These observations clearly indicate that the IUCD once accepted is used for a longer period of time, thereby providing greater couple years of protection than the oral contraceptive.

Figure I CUMULATIVE CONTINUATION RATE



Some of the important socio-demographic variables that could influence differentials in the pattern of continuation/retention of oral contraceptives and IUCD was studied.

TABLE 2.3

Retention Rate of IUCD according to Age Groups and Duration of use

Age Group	Duration in months							
	1	3	6	9	12	18	24	30
Below 25 years	95.3	91.0	84.7	77.2	74.2	71.2	71.1	64.5
25-34 years	94.2	86.5	79.1	71.1	70.0	62.2	61.2	50.1
Above 35 years	97.7	92.2	88.5	87.1	83.5	79.6	79.6	63.9

When classified according to the above age groups, significant* differentials in the retention rates were recorded between the age groups. Retention rates were significantly high in women below 25 years and above 35 years of age suggesting that greater contraceptive protection is sought by women in these groups.

Influence of living children on Retention of IUCD

TABLE 2.4

Retention Rates of IUCD according to Number of Living Children and Duration of use

Number of Living Children		Duration in Months						
	1	3	6	9	12	18	24	30
0-3	96.0	88.0	83.0	76.0	74.1	62.0	61.0	45.4
4+	94.0	92.0	81.0	71.0	70.0	66.2	66.2	57.1

* A proportion test at 0.05 level of significance is used wherever a significant difference is commented upon.

The retention rates categorized according to the number of living children (grouped into 0-3 and 4 & above) reveals an interesting feature. The retention rates for IUCD is higher among women with 3 or less than three children upto end of first year though the difference is not significant but thereafter the pattern is reversed with higher retention rates recorded for women with 4 or more children with a significant difference being recorded at 30 months.

Influence of Education on Retention of IUCD

TABLE 2.5.

Retention Rates of IUCD according to levels of Education and Duration of use

Level of Education	Duration in months							
	1	3	6	9	12	18	24	30
No Schooling	90.9	90.9	90.9	90.9	84.8	58.7	58.7	35.2
Grades 1-5	95.5	89.9	81.3	74.5	72.5	59.5	59.5	46.0
Grades 6 & above	95.2	87.9	82.6	76.5	74.4	65.5	64.6	51.2

When classified according to levels of education it appears that education has had no significant influence on retention of IUCD.

Influence of Age on Continuation of Oral Contraceptives

TABLE 2.6.

Continuation Rates of Oral Contraceptives According to Age Groups and Duration of use

Age Group	Duration in months							
	1	3	6	9	12	18	24	30
Below 25	93.4	83.4	64.9	54.5	53.6	43.1	41.4	31.0
25 - 34	90.0	74.5	57.2	52.6	51.1	39.5	39.5	23.7
35+	87.5	78.5	65.1	58.8	58.8	49.3	49.3	24.7

The continuation rates calculated for the different age groups indicated that the rates are relatively higher in women below 25 years and above 35 years of age especially at 24 months & 30 months. A similar pattern was observed with the IUCD and would suggest that greater contraceptive protection is sought by women in these age groups.

Influence of living children on continuation of Oral Contraceptives

TABLE 2.7.

Continuation Rates of Oral Contraceptives according to Number of Living Children and Duration of Use

No. of Living Children	Duration in months							
	1	3	6	9	12	18	24	30
0-3	91.8	74.9	61.7	55.6	44.8	43.8	43.8	41.4
4 & above	88.2	71.9	54.8	48.4	48.4	39.5	39.5	22.8

The continuation rates categorized according to the number of living children (grouped into 0 to 3 & 4 and above) indicated that there is no significant difference between the number of living children and the duration of use upto 24 months. Thereafter the continuation rates were significantly higher for women with 0 to 3 children.

Influence of Education on Continuation of the Oral Contraceptive

TABLE 2.8

Continuation Rates of Oral Contraceptives According to Levels of Education and Duration of Use

Level of Education	Duration in Months							
	1	3	6	9	12	18	24	30
No Schooling	100	74.5	61.3	50.8	50.8	39.5	19.7	19.7
Grade 1-5	89.0	72.3	54.8	47.9	47.9	36.9	36.9	27.3
Grade 6+	91.3	74.4	63.3	58.6	46.0	44.6	29.5	29.5

The continuation rates indicated that Education did not bear any significant influence on the use of orals. However a significant difference was observed between the categories of no-schooling and grades 1 to 5 at 24 months.

Expectation of the duration of use was calculated according to Mauldins formula.[1] The expected duration of use is 1.8 years for Oral Contraception and 3.5 years for IUCD.

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1. $R(t) = ae^{-rt}$

a is the proportion retaining after the "immediate drop out"

r is the monthly probability of terminating

t is the time (in months)

e is the base of natural logritham

R (t) is the proportion of a cohort of IUCD/Oral Pill acceptors who are still retaining it at the end of time t.

Reference: Life Table Retention Rates, Retention Function on conversion factor of IUCDs and Oral Pills PDH - 11.7

Lin, P.T., L.P. Chow & H. Abbey 'A Study on IUD Retention by Curve Fitting'. Demography, Vol. 9, No.1. Feb. 1972.

CHAPTER 3

DISCONTINUATION OF IUCD AND ORAL CONTRACEPTIVES

Data collected on certain aspects of discontinuation of the IUCD* (Lippes Loop) and Oral Pill were analysed to determine the termination rates for each method using the multiple decrement life table technique.

Of the total sample of 552 IUCD acceptors and 507 pill acceptors, 169 and 259 respectively had discontinued the IUCD and the Oral Pill at the time of the survey.

TABLE 3.1

Distribution of Respondents

Respondents	IUCD	Oral Pill
Total Respondents	552	507
Number discontinued at time of survey	169	259
Percent discontinued	30.6	51.1

The net cumulative termination rates are given in Table 3.2.

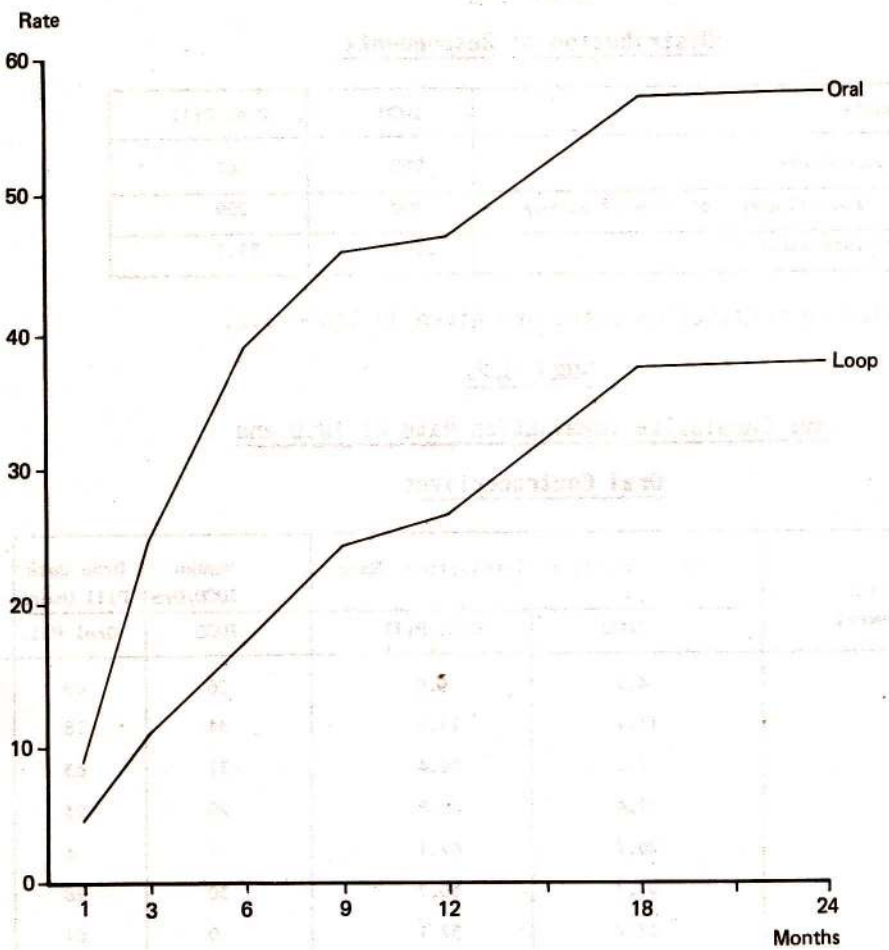
TABLE 3.2.

Net Cumulative Termination Rate of IUCD and Oral Contraceptives

Ordinal Month After Commencement	Net Cumulative Termination Rate		Number of Drop Outs IUCD/Oral Pill Users	
	IUCD	Oral Pill	IUCD	Oral Pill
1	4.7	9.0	26	45
3	11.1	24.9	34	78
6	17.5	39.4	31	63
9	24.4	45.8	25	23
12	26.7	47.1	7	4
15	37.7	56.7	30	28
18	37.7	57.1	0	01
21	38.3	57.7	1	01
24	38.3	57.7	0	0
27	52.3	72.4	14	16
30	52.3	72.4	1	0

* Upto 1984, the IUCD used through out the country was the Lippes loop. Thereafter the Copper Multiload 250 and Copper 380A were introduced into the National Programme.

Figure II CUMULATIVE TERMINATION RATE



The net cumulative termination rates indicate that discontinuation was considerably higher among users of oral contraceptives than IUCD. At the end of 3 months the IUCD had a net cumulative termination rate of 11.1 per 100 acceptors while oral contraceptives recorded a rate as high as 24.9 per 100 acceptors. At the end of 12 months the termination rates were 26.7 for IUCD and 47.1 for oral contraceptives. The termination rates stabilized for both methods from the 15th to the 24th month, with rates of 38.3 and 57.7 respectively for IUCD and Oral contraceptives at 24 months. However a sudden increase in the termination rates for both methods was observed thereafter with rates of 52.3 and 72.4 recorded for IUCD and Oral contraceptives respectively.

Discontinuation was high in the first three months for both methods and thereafter showed a lower rate of discontinuation. This tendency to discontinuation at the initial period with rates stabilizing from the 15th to the 24th month and increasing sharply thereafter seems to suggest a pattern of use. The initial period during which the discontinuation was high could be considered as a 'period of trial' where the acceptor really tries out the method. Once satisfied, the acceptor becomes a 'satisfied user' as seen by stabilization in the discontinuation rates. The period from the 24th month to 27th month could be considered as the time of decision-making when the user either decides to continue with the method for a further period or discontinues for a specific purpose such as to have another child or to change over to a permanent method.

Termination of IUCD

Termination rates according to type of discontinuation are illustrated in Table 3.3.

Figure III CUMULATIVE TERMINATION RATE BY TYPE OF EVENT-LOOP

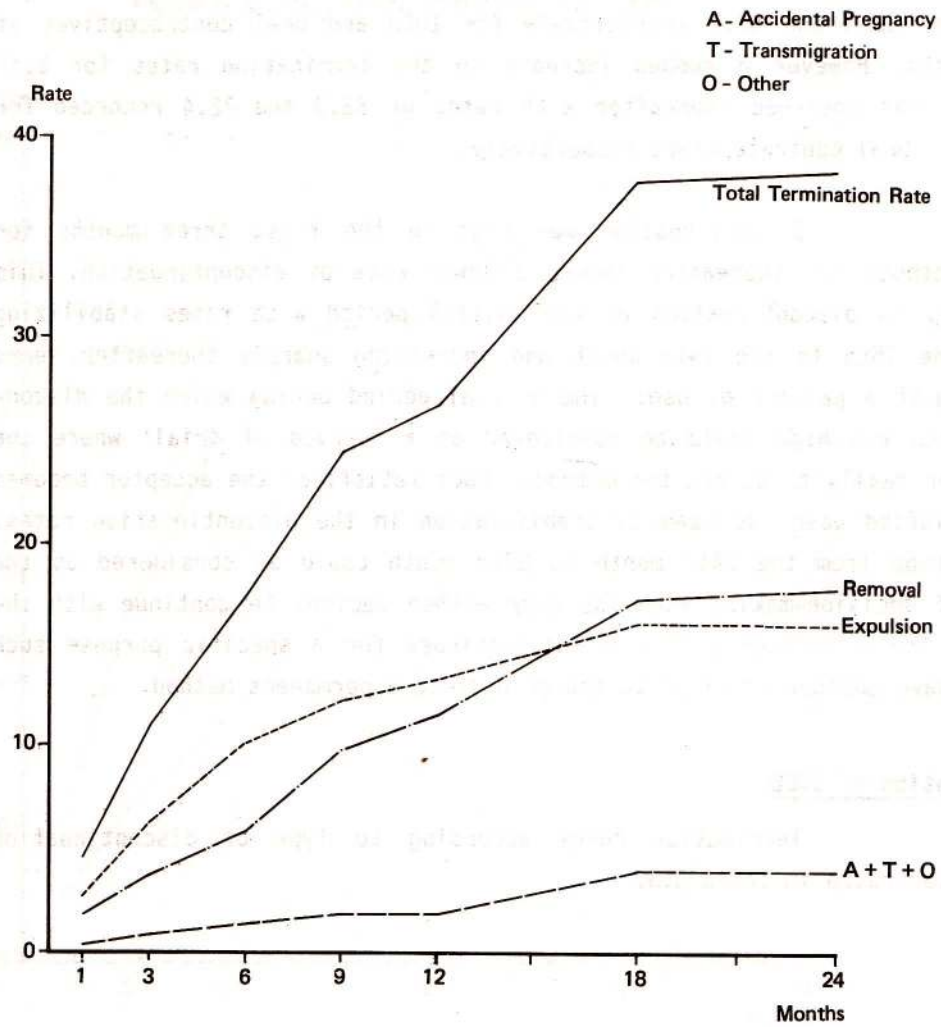


TABLE 3.3

Cumulative Termination of IUCD per 100 women According to the Type of Discontinuation

Type of Discontinuation	Number Discontinued	Net Cumulative Termination Rate						
		1 Month	3 Months	6 Months	9 Months	12 Months	18 Months	24 Months
Removals	78	1.8	3.8	5.9	9.8	11.5	17.4	17.9
Expulsions	75	2.5	6.4	10.2	12.7	13.3	16.2	16.2
Accidental Pregnancies	11	-	0.2	0.6	0.9	0.9	3.1	3.1
Others	5	0.4	0.7	0.8	1.0	1.0	1.0	1.1
Cumulative Terminations		4.7	11.1	17.5	24.4	26.7	37.7	38.3

Expulsions have recorded the highest net cumulative termination rates upto 12 months of insertion. Thereafter removals have the highest termination rates. Terminations as a result of accidental pregnancy was found to be considerably low for all time periods when compared to termination due to expulsions and removals. However the termination rates due to accidental pregnancy have shown a significant rise after the 12th month of use, increasing from 0.9 at 12 months to 3.1 at 18 and 24 months.

These observations suggest that upto 1 year, the probability of termination due to expulsion is higher than the probability of termination due to removal. This raises the issue as to whether technique of insertion by programme personnel need to be improved. However after 1 year the pattern is reversed and the probability due to removal is higher than the probability due to expulsion.

Reasons for removal of the IUCD

The main reasons for removal of IUCD are illustrated in Table 3.4.

TABLE 3.4.

Percentage Distribution of Discontinuers due to Removal of the IUCD

Main Reasons for Removal	Discontinuers	
	Number	Percent
Excessive menstrual bleeding	13	16.7
Irregular bleeding	11	14.1
Abdominal cramps	12	15.4
Back ache	-	-
White Discharge	2	2.5
Urinary problems	2	2.5
Generalize weakness	2	2.5
Other medical/physical reasons	8	10.3
General -		
Fear of ill health	2	2.5
Husband opposed	3	3.9
Husband separated/divorced	3	3.9
Got sterilized	11	14.1
Wanting to have another child	5	6.4
May not conceive hereafter	1	1.3
Other reasons	3	3.9
TOTAL	78	100.0

The main reasons given for removal of the IUCD were excessive menstrual bleeding, irregular bleeding, and frequent abdominal cramps which accounted for 46.2% of all stated reasons for removal. 14.1% stated that they changed over to sterilization and another 6.4% stated that removal was requested because another child was desired.

TABLE 3.5

Main Reasons for Removal of IUCD according to Duration of Use

Main Reasons	Months							
	0-3	4-6	7-9	10-12	13-18	19-24	>24	Total
Excessive bleeding	3	1	4	1	2	1	1	13
Irregular bleeding	6	2	1	0	2	0	0	11
Abdominal cramps	4	5	1	1	1	0	0	12
Resorted to sterilization	0	0	0	0	4	2	5	11
Wanting to have another child	0	0	1	1	3	0	0	5

Of the 46.2% (36) who stated that the IUCD was removed due to menstrual irregularities and abdominal cramps, approximately 58% (21) stated that they requested removal of the IUCD during the first six months.

TABLE 3.6.

Sterilization among IUCD Discontinuers According to Time of Termination and Number of Living Children.

Number of Living Children	Number Sterilized				Total
	12 months	15-18 months	19-24 months	> 24 months	
1-2	0	0	1	0	1
3	0	3	1	5	9
4 and over	0	1	0	0	1
Total	0	4	2	5	11
Percentage	-	36.3	18.2	45.5	100.0

It is note worthy that those who have changed over to sterilization had used the IUCD for a minimum period of 15 months and 81.8% had 3 living children.

The above observations suggest that there appears to be an understanding among mothers about the rationale for the use of temporary methods, spacing in the case of those who wanted more children and postponement among others with 2 or 3 children till a decision is taken to accept a permanent method.

Discontinuation of Oral Pill

TABLE 3.7.

Percentage Distribution of Discontinuers of Oral Contraceptives

Reasons for Discontinuation	Total number Discontinuing	Percent
Medical Reasons:		
Nausea and vomiting	51	19.7
Feeling dizzy	49	19.0
Frequent Headaches	4	1.6
Menstrual Disturbances	30	11.6
Other medical reasons	28	10.8
General Reasons:		
Inconvenient to take daily	21	8.1
Harmful to health	6	2.3
Difficult to obtain pills	4	1.5
Separated from husband	8	3.1
Changed over to sterilization	8	3.1
Wanted a child	20	7.7
Accidental pregnancy	12	4.6
Other reasons	18	6.9
Total	259	100.0

The main reasons for discontinuation of oral contraceptives were nausea/vomiting, dizziness and menstrual disturbances which comprised 50.4% of all reasons. "Inconvenient to take the pill daily" and "wanting to have another child" listed high in the general reasons for discontinuation. Accidental pregnancies accounted for 4.6% of discontinuers. Only 1.6% of discontinuers stated that they had to stop the pill due to difficulties in obtaining supplies.

TABLE 3.8.

Percentage Distribution of Discontinuers of Oral Pill according to Reasons and Time of Termination

Main Reasons	Duration in Months								
	0-3	4-6	7-9	10-12	13-18	19-24	25+	Total Number	%
Nausea/Vomiting	68.7	11.7	11.7	-	7.9	-	-	51	100
Feeling dizzy	55.1	30.6	10.2	-	4.1	-	-	49	100
Frequent Headaches	100.0	-	-	-	-	-	-	4	100
Menstrual Disturbances	43.4	26.7	10.0	6.6	13.3	-	-	30	100
Changed to sterilization	-	-	-	-	-	75.0	25.0	8	100

Discontinuation of orals due to nausea/vomiting, feeling dizzy, frequent headaches and menstrual disturbances was highest during the first three months. Thereafter these side effects have shown a steady decline. Discontinuation as a result of change over to sterilization was observed only after about 1½ years of use.

These observations highlight the need for regular follow-up, reassurance and advice by health workers, particularly during the first six months following commencement of the oral pill.

Distribution of Discontinuers of IUCD and Oral Contraceptives according to Levels of Education

Education	IUCD			ORAL CONTRACEPTIVES		
	TOTAL SAMPLE	DISCONTINUERS		TOTAL SAMPLE	DISCONTINUERS	
		NUMBER	PERCENT		NUMBER	PERCENT
No schooling	22	6	27.3	29	17	58.6
Grades 1 - 5	177	59	33.3	135	74	54.8
Grades 6 - 9	246	81	32.9	213	105	49.3
GCE O'Level	94	20	21.3	114	55	48.2
GCE A' Level and Above	13	3	23.1	16	8	50.0
TOTAL	552	169	30.6	507	259	51.1

Discontinuers were higher for oral contraceptives than for IUCD at all educational levels. The highest proportion of discontinuers of oral contraceptive (58.6%) were women with no schooling whereas for IUCD the proportion discontinuing was highest among those with primary or secondary levels of education. (33.3% and 32.9% respectively for the two groups). It is of interest to note that discontinuation of oral contraceptives decreased with increasing levels of education whereas for IUCD, terminations were less among those with no schooling (27.3%) and those with higher levels of education - GCE O' level and above (23.1%).

CHAPTER 4

SELECTION, MOTIVATION AND COUNSELLING FOR IUCD AND ORAL CONTRACEPTIVE

The main reasons for choosing the family planning method and certain aspects of the services provided to acceptors of IUCD and oral contraceptives are discussed in this section.

Reasons for Accepting the Contraceptive Methods

The main reasons for choosing the IUCD and Oral contraceptive are illustrated in Table 4.1.

TABLE 4.1.

Distribution of Acceptor Responses according to Reasons for Selection of Method

Main Reasons	Acceptor Responses			
	IUCD		Oral Contraceptive	
	Number	%	Number	%
Easy to use	103	18.4	97	18.5
Easily obtainable	67	12.0	71	13.6
Reliable Method	254	45.3	218	41.7
Harmless	61	10.9	53	10.1
Because the method is used by friends/relatives	19	3.4	12	2.3
Husband prefers this method	1	0.2	2	0.4
Easy to discontinue	-	-	10	1.9
Other reasons	55	9.8	60	11.5
Total	560	100.0	523	100.0

Although only 552 and 507 acceptors of IUCD and Oral Pills were interviewed there were 560 and 523 responses respectively for the two methods since a few acceptors had stated more than one reason for selecting the particular method.

45.3% and 41.7% of acceptor responses for choosing IUCD and Oral Contraceptives were because they considered the method to be reliable. Another 30.4% of responses among IUCD users and 32.1% of oral pill users had selected the particular method because it was easy to use or easily obtainable. 10.9% and 10.1% of IUCD & Oral Pill users stated that they chose the method because they thought that the particular method was harmless.

These responses suggest that the majority of acceptors had been objective in their selection taking into account factors like reliability, availability, ease of use and safety before deciding on the method. Only a very small proportion had selected the particular method because it was used either by friends or relatives or because of spouse preference. This suggests a high degree of selectivity among respondents regarding choice of a family planning method.

Source of Motivation

Data regarding the source responsible for the respondents acceptance/practice of the method was collected and analysed.

TABLE 4.2.

Distribution according to Motivation Personnel

SOURCE	Acceptors			
	IUCD		Oral contraceptive	
	Number	%	Number	%
Medical Personnel (MO/MOH,AMP/RMP)	3	0.5	10	2.0
Public Health Midwife (PHM) of Area	468	84.8	456	89.8
Other Field Health Workers	8	1.4	8	1.6
Institutional Health Workers	8	1.4	8	1.6
F.P. Workers of Non-Governmental Organizations	5	0.9	7	1.4
Health Volunteers	6	1.1	-	
Relatives/Friends	33	6.0	10	2.0
Husband	9	1.6	3	0.6
Others	12	2.3	5	1.0
Total	552	100.0	507	100.0

Of the acceptors of IUCD and Oral contraceptives, 84.8% and 89.8% respectively stated that they were motivated by the local PHM to accept the method. Relatives or Friends appeared to play some part in the motivation process for IUCD acceptance.

The data indicates that the local PHM has had a major influence when it actually comes to accepting and practising a modern family planning method. Previous studies have shown that the mass media, friends, relations and other health workers also play an important role in creating awareness by dissemination of information about family planning.[1]

The PHM is responsible for the domiciliary care of mothers and children within her area. The provision of family planning advice and services are part of her functions during routine home visits. The findings of this study highlights the importance of interpersonnal communication particularly in the home situation for improving acceptance and practice of modern family planning methods.

One would expect the PHM rating to be very high in this study since the sample was mainly selected from Government clinics and PHM records. However, past studies have shown that 97.9% of IUCD and 62.5% of oral contraceptive services are provided through government service outlets.

Family Planning Advice and Guidance before or after accepting method

Data in respect of advice and guidance either before or after accepting a family planning method is illustrated in Table 4.3.

TABLE 4.3.

Distribution of Respondents according to person providing advice

Persons providing advice and guidance	Respondents			
	IUCD		Oral contraceptive	
	Number	%	Number	%
Medical Officer/MOH/RMP/AMP	14	2.5	-	-
Health Workers at clinic/ institution	55	10.0	22	4.3
Area Public Health Midwife	456	82.6	477	94.1
Others	14	2.5	8	1.6
No Response	13	2.4	-	-
Total	552	100.0	507	100.0

1. Family Health Impact Survey - 1981/82

The local PHM has been listed very high in providing advice and guidance either before or after the method was adopted, for both IUCD and Oral Contraceptives. 82.6% of IUCD users and 94.1% of oral contraceptors stated that the local PHM had given them the necessary advice and instruction either before or after accepting the method. The high level of PHM influence in respect of the IUCD is probably due to the advice and guidance given by the PHM during home visits, after which the PHM links the acceptor to the IUCD clinic at which she is also present. In the case of IUCD, only 10.0% stated that either pre-insertion or post insertion advice was provided at the clinic/institution. This probably relates to those who made direct clinic contact although ideally advice at home should also have been given and re-inforced in the clinic situation.

This observation highlights the importance of counselling as a part of routine procedure by health staff in Family Planning Clinics and Medical Institutions where family planning services are provided.

CHAPTER - 5

SUMMARY & CONCLUSION

Temporary Modern Contraceptive Methods have been used in the National Family Planning Programme since 1968. Though data is available on Family Planning Acceptors through the routine reporting system very little information is available on the duration of contraceptive use. This study has sought to provide data on the duration of use of the Intra Uterine Contraceptive Device (Lippes Loop) and the Oral Contraceptive, and to probe deeper into certain aspects regarding their use.

Data was collected in respect of 552 IUCD and 507 oral pill acceptors. At the time of the survey 383 respondents were still using the IUCD and 248 were continuing to use the pill.

The study revealed that the IUCD once accepted had a significantly higher continuation than the oral contraceptive for all time periods.

Continuation & Retention Rates of Oral Contraceptives and IUCD

Type of Method	Ordinal month after Commencement										
	1	3	6	9	12	15	18	21	24	27	30
Oral Pill	91.0	75.1	60.6	54.2	52.9	43.3	42.9	42.3	42.3	27.6	27.6
IUCD	95.3	88.9	82.5	75.6	73.3	62.3	62.3	61.7	61.7	47.7	47.7

Both methods showed a high continuation/retention during the first three months. At the end of the third month continuation/retention rates of 75.1 and 88.9 percent were observed for the Oral Pill and IUCD respectively and thereafter continuation/retention rates of 52.9 and 73.3 percent respectively were recorded for the Oral Pill and IUCD at the end of 1 year. The continuation rate at the end of 2 years for Oral Pills was 42.3 percent and the retention rate for IUCD remained as high as 61.7 percent.

The expectation of use calculated for IUCD was 3.5 years while for Oral Contraceptives it was only 1.8 years. This indicates that the IUCD affords greater couple years of protection than the Oral Contraceptive.

As mentioned earlier, proportion of discontinuers was considerably higher among Oral Contraceptors than IUCD users for all time periods. The initial period showed a high proportion of discontinuers for both methods. Thereafter rates stabilized from the 15th to the 24th month followed by a sharp rise in the proportion of discontinuers. The initial period could be considered as a 'period of trial' during which time the acceptor tries out the method. This is followed by a 'period of satisfaction' and then a 'time of decision making' wherein the acceptor either decides to continue with the method or terminates the method for a specific purpose.(Eg. to change over to a permanent method or to have another child).

Expulsions recorded the highest net cumulative termination rates for IUCD during the first twelve months. After 12 months, removals have shown the highest net cumulative termination rates. Terminations due to accidental pregnancy was low for all time periods although an increasing trend was observed with time.

The main reasons for removal of the IUCD were excessive menstrual bleeding, irregular bleeding and abdominal cramps, which accounted for 46.2% of total removals. Switch-over to a permanent method accounted for approximately 14% of total removals.

The main reasons for discontinuation of Oral Contraceptives were nausea/vomiting; dizziness; and menstrual disturbances (50.4%). Terminations due to these side effects were highest during the first three months. Thereafter it showed a steady decline. Switch-over to a permanent method after use for a minimum period of 18 months accounted for approximately 3% of total discontinuers.

86.6% IUCD acceptors and 83.9% of Oral Contraceptors had selected the method based on reliability, safety, ease of use and service availability which indicates that the majority had been objective regarding the selection of a contraceptive method of their choice.

Data from the study revealed that the local PHM was the main motivating factor for actual acceptance and practice of family planning methods, though past studies have shown that mass media, friends, relations and health workers in medical institutions had played an important role in creating awareness through the dissemination of information on family planning. The local PHM has been listed 'very high' for providing advice and guidance both before and after acceptance of a method.

This highlights the importance of interpersonnel communication for family planning particularly in the home situation which the PHM is able to provide in the coverage of her routine duties.

In the clinic situation however pre and post insertion counselling of IUCD acceptors appeared to be low. Most acceptors who sought services at Government Family Planning Clinics/Centres may be presumed to have received the necessary advice and guidance through the local PHM. In most situations the local PHM also assist at these clinics. This may account for the low level of pre and post insertion counselling in the clinic situation. This is a weakness that needs correction since ideally the clinic should strengthen and re-inforce the advice and guidance provided in the field.

TABLE 1

APPENDIX I

RETENTION RATES OF LOOP - 1984/85

x TIME AFTER INSERTION (IN MONTHS)	Nx NO USING AT EXACT TIME X	Cx NO STILL USING AT THE CUT OFF DATE AT DURATION	Dx TOTAL DISCONTINUING BETWEEN x AND x + 1 (WHO SAID HAD USED FOR x MONTHS)	N'x ADJUSTED NUMBER EXPOSED TO RISK OF TERMINATING (Nx - ½ Cx)	qx PROBABILITY OF STOPPING FOR ANY REASON BETWEEN x AND x + 1 IF STILL USING AT x (Dx/N'x)	px PROBABILITY OF CONTINUING USE THROUGH INTERVAL FROM x, (x+1) IF STILL (1-qx)	Px PROPORTION STILL USING AT EXACT TIME x. (The cumulative continuation and Retention Rate)
0	552	03	26	550.5	.047229791	.952770209	1.00000
1	523	03	24	521.5	.046021093	.953978907	.952770209
2	496	35	10	478.5	.020898641	.979101359	.908922682
3	451	27	19	437.5	.043428571	.956571429	.889927433
4	405	16	07	397.0	.017632241	.982367759	.851279157
5	382	25	05	369.5	.013531799	.986468201	.836269197
6	352	26	08	339.0	.02359882	.97640118	.824952971
7	318	45	07	295.5	.023688663	.976311337	.805485054
8	266	12	10	260.0	.038461538	.961538462	.78640419
9	244	14	05	237.0	.021097046	.978902954	.756157875
10	225	10	02	220.0	.00909090	.9909091	.740205178
11	213	11	0	207.5	-	1.0000000	.733476046
12	202	05	30	199.5	.150375939	.849624061	.733476046
13	167	08	0	163.0	-	1.0000000	.623178896
14	159	15	0	151.5	-	1.0000000	.623178896
15	144	06	0	141.0	-	1.0000000	.623178896
16	138	04	0	136.0	-	1.0000000	.623178896
17	134	12	0	128.0	-	1.0000000	.623178896
18	122	07	01	118.5	.0084388185	.991561182	.623178896
19	114	19	01	104.5	-	1.0000000	.617920002
20	95	06	0	92.0	-	1.0000000	.617920002
21	89	07	0	85.5	-	1.0000000	.617920002
22	82	05	0	79.5	-	1.0000000	.617920002
23	77	11	0	71.5	-	1.0000000	.617920002
24	66	09	14	61.5	.227642276	.772357724	.617920002
25	43	06	0	40.0	-	1.0000000	.477255281
26	37	04	0	35.0	-	1.0000000	.477255286
27	33	04	0	31.0	-	1.0000000	.477255286
28	29	02	0	28.0	-	1.0000000	.477255286
29	27	11	0	21.5	-	1.0000000	.477255286
30	16	14	01	9.0	.111111111	.888888889	.477255286
31	01	01	0	0.5	-	1.0000000	.424226921
		383	169				

Nx = Women admitted to the programme between 1st January 1982 and January 1st 1983, and followed to July 31st 1984 or to their point of termination with the programme.

N'x = (Nx - ½Cx) = Correction factor

(1) Assumption:- ½ is used assuming withdrawals occur evently through period x,x+1.

(2) Assumption:- $P_0 = 1$

$P_{x+1} = P_x$

CONTINUATION RATES OF ORAL PILL - 1984/85

x TIME AFTER START (IN MONTHS)	Nx NO USING AT EXACT TIME X	Cx NO STILL USING AT THE CUT OFF DATE AT DURATION	Dx TOTAL DISCONTINUING BETWEEN x AND x + 1 (WHO SAID HAD USED FOR x MONTHS)	N'x ADJUSTED NUMBER EXPOSED TO RISK OF TERMINATING (Nx - ½ Cx)	qx PROBABILITY OF STOPPING FOR ANY REASON BETWEEN x AND x + 1, IF STILL USING AT X (Dx|N'x)	px PROBABILITY OF CONTINUING USE THROUGH INTERVAL FROM x, (x + 1) IF STILL (1-qx)	Px PROPORTION STILL USING AT EXACT TIME x. (The cumulative continuation and retention rate)
0	507	2	45	506.0	.088932806	.911067194	1.00000
1	460	12	42	454.0	.092511013	.907488987	.911067194
2	406	22	36	395.0	.09113924	.90886076	.826783445
3	348	16	37	340.0	.108823529	.891176471	.75143103
4	295	16	13	287.0	.045296167	.954703833	.669657653
5	266	19	13	256.5	.050682261	.949317739	.639324728
6	234	15	11	226.5	.048565121	.951434879	.606922306
7	208	13	07	201.5	.034739454	.965260546	.57744705
8	188	05	5	185.5	.026954177	.973045823	.557386797
9	178	06	2	175.0	.011428571	.988571429	.542362895
10	170	06	1	167.0	.0059880239	.994011977	.53616445
11	163	06	1	160.0	.00625	.99375	.532953897
12	156	06	28	153.0	.183006536	.816993464	.529622935
13	122	08	0	118.0	-	1.0000	.432698476
14	114	05	0	111.5	-	1.0000	.432698476
15	109	07	1	105.0	.0094786729	.990521328	.432698476
16	101	09	0	96.5	-	1.0000	.428597069
17	92	06	0	89.0	-	1.0000	.428597069
18	86	06	1	83.0	.012048192	.987951808	.428597069
19	79	07	0	75.5	-	1.0000	.423433249
20	72	09	0	67.5	-	1.0000	.423433249
21	63	02	0	62.0	-	1.0000	.423433249
22	61	05	0	58.5	-	1.0000	.423433249
23	56	08	0	52.0	-	1.0000	.423433249
24	48	04	16	46.0	.347826087	.652173913	.423433249
25	28	02	0	27.0	-	1.0000	.276152119
26	26	01	0	25.5	-	1.0000	.276152119
27	25	03	0	23.5	-	1.0000	.276152119
28	22	07	0	18.5	-	1.0000	.276152119
29	15	03	0	13.5	-	1.0000	.276152119
30	12	06	0	9.0	-	1.0000	.276152119
31	6	06	0	3.0	-	1.0000	.276152119
		248	259				

Nx = Women admitted to the programme between 1st January 1982 and January 1st 1983, and followed to July 31st 1984 or to their point of termination with the programme.

N'x =(Nx-½Cx)= Correction factor

(1)Assumption :- ½ is used assuming withdrawals occur evently through period x,x+1.

(2) Assumption :- $P_0 = 1$

$P_{x+1} = P_x$

TABLE III

MONTHLY AND CUMULATIVE TERMINATION RATES BY TYPE OF EVENT - LOOP - 1984/85

Time After Insertion	Total discontinuous	No Discontinuing Between x and x+1 by Type of Termination					Adjusted Number Exposed to Risk of Terminating	Probability of stopping Between x and x+1 if still using at x by type of termination					Continuation Retention Rate	Monthly Termination Rates Between x and x+1 by Type of Termination					Cumulative Termination Rates by Each Type					Total Cumulative Termination Rates
x	Dx=Rx+Ex+Ax+Tx+Ox	Rx	Ex	Ax	Tx	Ox	N'x	Rqx	Eqx	Aqx	Tqx	Oqx	Px	R_r	E_r	A_r	T_r	O_r	R	E	A	T	O	
0-1	26	10	14	0	1	1	550.5	.01817	.02543	-	.00182	.00182	1.00000	.01817	.02543	-	.00182	.00182	-	-	-	-	-	-
1-2	24	9	14	1	0	0	521.5	.01726	.02685	.00192	-	-	.95277	.01644	.02557	.00183	-	-	.01817	.02543	-	.00182	.00182	.047
2-3	10	2	7	0	1	0	478.5	.00418	.01463	-	.00209	-	.90892	.00380	.01330	-	.0019	-	.03461	.05101	.00183	.00182	.00182	.091
3-4	19	4	13	1	0	1	437.5	.00914	.02971	.00229	-	.00229	.88993	.00813	.02643	.00204	-	.00204	.03841	.06431	.00183	.00372	.00182	.110
4-5	07	4	2	1	0	0	397	.01008	.00503	.00252	-	-	.85728	.00858	.00428	.00216	-	-	.04654	.09074	.00387	.00372	.00386	.143
5-6	05	2	3	0	0	0	369.5	.00541	.00812	-	-	-	.83627	.00452	.00679	-	-	-	.05512	.09502	.00603	.00372	.00386	.164
6-7	08	4	3	0	0	1	339	.0118	.00885	-	-	00295	.82495	.00973	.00730	-	-	.00243	.05964	.10181	.00603	.00372	.00386	.175
7-8	07	4	2	1	0	0	295.5	.01354	.00677	.00338	-	-	.80549	.01091	.00545	.00272	-	-	.06937	.10911	.00638	.00372	.00629	.195
8-9	10	6	4	0	0	0	260	.02308	.01538	-	-	-	.78640	.01815	.01209	-	-	-	.08028	.11456	.00875	.00372	.00629	.214
9-10	05	3	2	0	0	0	237	.01266	.00844	-	-	-	.75616	.00957	.00638	-	-	-	.09843	.12268	.00875	.00372	.00629	.244
10-11	02	2	0	0	0	0	220	.00909	-	-	-	-	.74021	.00673	-	-	-	-	.10804	.13303	.00875	.00372	.00629	.260
11-12	0	0	0	0	0	0	207.5	-	-	-	-	-	.73348	-	-	-	-	-	.11477	.13303	.00875	.00372	.00629	.267
12-13	30	16	8	6	0	01	199.5	.08020	.0401	.03008	-	-	.73348	.00883	.02941	.02206	-	-	.11477	.13303	.00875	.00372	.00629	.267
13-14	0	0	0	0	0	0	163	-	-	-	-	-	.62318	-	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
14-15	0	0	0	0	0	0	151.5	-	-	-	-	-	.62318	-	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
15-16	0	0	0	0	0	0	141	-	-	-	-	-	.62318	-	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
16-17	0	0	0	0	0	0	136	-	-	-	-	-	.62318	-	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
17-18	0	0	0	0	0	0	128	-	-	-	-	-	.62318	-	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
18-19	01	1	0	0	0	0	118.5	.00843	-	-	-	-	.62318	.00526	-	-	-	-	.1736	.16244	.03081	.00372	.00629	.377
19-20	0	0	0	0	0	0	104.5	-	-	-	-	-	.61792	-	-	-	-	-	.17885	.16244	.03081	.00372	.00629	.382
20-21	0	0	0	0	0	0	92	-	-	-	-	-	.61792	-	-	-	-	-	.17885	.16244	.03081	.00372	.00629	.382
21-22	0	0	0	0	0	0	85.5	-	-	-	-	-	.61792	-	-	-	-	-	.17885	.16244	.03081	.00372	.00629	.382
22-23	0	0	0	0	0	0	79.5	-	-	-	-	-	.61792	-	-	-	-	-	.17885	.16244	.03081	.00372	.00629	.382
23-24	0	0	0	0	0	0	71.5	-	-	-	-	-	.61792	-	-	-	-	-	.17885	.16244	.03081	.00372	.00629	.382
24-25	14	11	2	1	0	0	61.5	.17886	.03252	.01626	-	-	.61792	.11052	.02009	.01005	-	-	.17885 .28937	.16244 .18253	.03081 .04086	.00372 .00372	.00629 .00629	.382

R - Removal

E - Expulsion

A - Accidental Pregnancy

T - Transmigation

O - Other

R_r - Monthly termination rate due to Removal

E_r - Monthly termination rate due to Expulsion

A_r - Monthly termination rate due to Accidental Pregnancy

T_r - Monthly termination rate due to Transmigation

O_r - Monthly termination rate due to Other Reasons.

Based on assumption that there are no dropouts during 1st month (Time after insertion = 0 duration of use month.)

TABLE IV

MONTHLY AND CUMULATIVE TERMINATION RATES BY TYPE OF EVENT - ORAL PILL 1984/85

Time After Start	Total Discontinuation	No. discontinuing x and x+1 by type of termination								Adjusted No. Exposed to Risk of Terminating	Probability of stopping between x and x+1 if still using at x by type of termination								Continuation Retention Rate
x	Dx = Ax+Bx+Cx Ex+Fx+Hx +Ix+Jx	Ax	Bx	Cx	Ex	Fx	Hx	Ix	Jx	N'x	Aqx	Bqx	Cqx	Eqx	Fqx	Hqx	Iqx	Jqx	Px
0-1	45	11	14	1	3	-	2	6	8	506	.02174	.02767	.00198	.00593	-	.00395	.01186	.01581	1.00000
1-2	42	12	10	-	1	1	2	3	13	454	.02643	.02203	-	.0022	.0022	.00441	.00661	.02863	.91107
2-3	36	12	3	3	1	-	3	4	10	395	.03038	.00759	.00759	.00253	-	.00759	.01013	.02532	.82678
3-4	37	4	9	-	4	1	1	6	12	340	.01176	.02647	-	.01176	.00294	.00294	.01765	.03529	.75143
4-5	13	1	2	-	1	-	1	2	6	287	.00348	.00697	-	.00348	-	.00348	.00697	.02091	.66966
5-6	13	1	4	-	-	-	-	-	8	256.5	.0039	.01559	-	-	-	-	-	.03119	.63932
6-7	11	3	3	-	1	-	1	-	3	226.5	.01325	.01325	-	.00442	-	.00442	-	.01325	.60692
7-8	07	2	2	-	-	-	-	-	3	201.5	.00993	.00993	-	-	-	-	-	.01489	.57745
8-9	5	1	-	-	1	-	-	1	2	185.5	.00539	-	-	.00539	-	-	.00539	.01078	.55739
9-10	2	-	-	-	-	-	2	-	-	175	-	-	-	-	-	.01143	-	-	.54236
10-11	1	-	-	-	-	-	-	-	1	167	-	-	-	-	-	-	-	.00599	.53616
11-12	1	-	-	-	-	-	-	-	1	160	-	-	-	-	-	-	-	.00625	.53629
12-13	28	4	1	-	-	-	3	2	18	153	.02614	.00654	-	-	-	.01961	.01307	.11765	.52962
13-14	0	-	-	-	-	-	-	-	-	118	-	-	-	-	-	-	-	-	.43270
14-15	0	-	-	-	-	-	-	-	-	111.5	-	-	-	-	-	-	-	-	.43270
15-16	1	-	1	-	-	-	-	-	-	105.5	-	.00948	-	-	-	-	-	-	.43270
16-17	0	-	-	-	-	-	-	-	-	96.5	-	-	-	-	-	-	-	-	.42860
17-18	0	-	-	-	-	-	-	-	-	89	-	-	-	-	-	-	-	-	.42860
18-19	1	-	-	-	-	-	-	-	1	83	-	-	-	-	-	-	-	.01205	.42860
19-20	0	-	-	-	-	-	-	-	-	75.5	-	-	-	-	-	-	-	-	.42343
20-21	0	-	-	-	-	-	-	-	-	67.5	-	-	-	-	-	-	-	-	.42343
21-22	0	-	-	-	-	-	-	-	-	62	-	-	-	-	-	-	-	-	.42343
22-23	0	-	-	-	-	-	-	-	-	58.5	-	-	-	-	-	-	-	-	.42343
23-24	0	-	-	-	-	-	-	-	-	52	-	-	-	-	-	-	-	-	.42343
24-25	16	1	-	-	1	-	-	4	10	46	.02174	-	-	.02174	-	-	.08696	.21739	.42343

A - Feeling Sick and Vomitish

B - Feeling Dizzy

C - Always having a Headache

E - Irregular Mensus

F - No Mensus

H - Heavy Mensus

I - Other Reasons

J - General Reasons

Table IV Continuation

Monthly Termination Rates Between x and x+1 by type of Termination								Cumulative Termination Rates by Each Type								Total cumulative Termination Rates
A_r	B_r	C_r	E_r	F_r	H_r	I_r	J_r	A	B	C	E	F	H	I	J	
.02174	.02767	.00198	.00593	-	.00395	.01186	.01581	-	-	-	-	-	-	-	-	
.0240795	.0200708	-	.0020043	.0020043	.0040178	.0060221	.0260839	.02174	.02767	.00198	.00593	-	.00395	.01186	.01581	.0946
.0251176	.0062752	.0062752	.0020917	-	.0062752	.0083753	.0209341	.0458195	.0477408	.00198	.0079343	.0020043	.0079678	.0178821	.0418939	.1732227
.0088368	.0198903	-	.0088368	.0022092	.0022092	.0132627	.0265180	.0709371	.054016	.008255	.010026	.0020043	.01423	.0262574	.062828	.2485526
.0023304	.0046675	-	.0023304	-	.0023304	.0046675	.0140025	.0797739	.0739063	.008255	.0188628	.0042135	.0164522	.0395201	.089346	.33033
.0024933	.0099670	-	-	-	-	-	.0199405	.0821043	.0785738	.008255	.0211932	.0042135	.0187826	.0441876	.1033485	.3606585
.0080417	.0080417	-	.0026825	-	.0026825	-	.0080417	.0845976	.0885408	.008255	.0211932	.0042135	.0187826	.0441876	.123289	.3930593
.005734	.005734	-	-	-	-	-	.0085981	.0926393	.0965825	.008255	.0238757	.0042135	.0214651	.0441876	.1313307	.4225494
.0030043	-	-	.0030043	-	-	.0030043	.0060086	.0983733	.1023165	.008255	.0238757	.0042135	.0214651	.0441876	.1399288	.4426155
-	-	-	-	-	.0061992	-	-	.1013776	.1023165	.008255	.02688	.0042135	.0214651	.0471919	.1459374	.457637
-	-	-	-	-	-	-	.0032115	.1013776	.1023165	.008255	.02688	.0042135	.0276643	.0471919	.1459374	.4638362
-	-	-	-	-	-	-	.0033309	.1013776	.1023165	.008255	.02688	.0042135	.0276643	.0471919	.149149	.4670478
.0138443	.0034637	-	-	-	.0103859	.0069221	.0623101	.1013776	.1023165	.008225	.02688	.0042135	.0276643	.0471919	.1524799	.4703787
-	-	-	-	-	-	-	-	.1152219	.1057802	.008255	.02688	.0042135	.0380502	.054114	.21479	.5673048
-	-	-	-	-	-	-	-	.1152219	.1057802	.008255	.02688	.0042135	.0380502	.054114	.21479	.5673048
-	.0041019	-	-	-	-	-	-	.1152219	.1057802	.008255	.02688	.0042135	.0380502	.054114	.21479	.5673048
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.21479	.5713967
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.21479	.5713967
-	-	-	-	-	-	-	.0051646	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.21479	.5713967
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713
-	-	-	-	-	-	-	-	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713
.0092054	-	-	.0092054	-	-	.0368217	.0920501	.1152219	.1098821	.008255	.02688	.0042135	.0380502	.054114	.2199546	.5765713

A_r - Monthly termination rates due to sickness and vomiting.
B_r - Monthly termination rates due to feeling dizzy.
C_r - Monthly termination rates due to headache.
E_r - Monthly termination rates due to regular menses.
F_r - Monthly termination rates due to no menses.
H_r - Monthly termination rates due to heavy menses.
J_r - Monthly termination rates due to general reasons.

Based on assumption that there are no dropouts during 1st month (Time after insertion = 0 duration of use month)

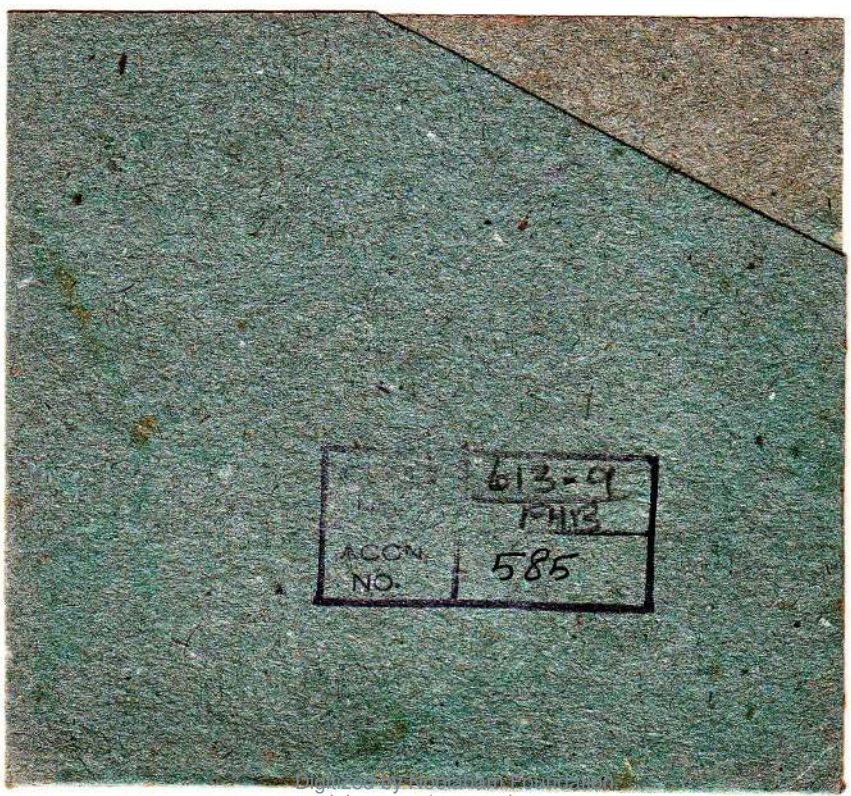
APPENDIX II

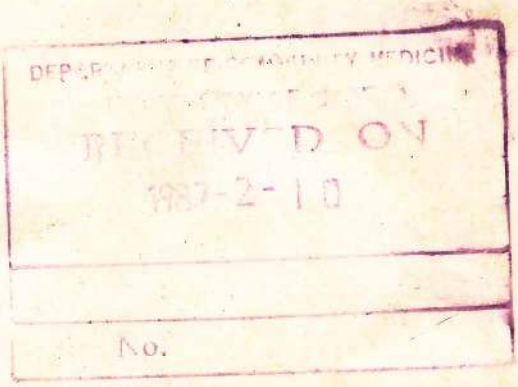
SURVEY TEAM

Dr. N.W. Vidyasagara	-	Project Director
Dr. K.P. Wickramasuriya	-	Project Manager
Mrs. S.S. Niunehella	-	Statistician
Mrs. K. Gamalath	-	Public Health Nursing Sister
Mr. S. Gamage	-	Programmer
Mrs. K. Wijesuriya	-	Data Controller
Mrs. A.R.D. Chandralatha	-	Data Entry Operator
Mrs. W.M. Malani	-	Data Entry Operator
Miss I. Marasinghe	-	Data Entry Operator
Mr. S.B. Karunaratne	-	Data Entry Operator
Mr. P.G. Gunesinghe	-	Statistical Officer
Mr. S. Jayakody	-	Statistical Officer
Mr. K. Piyadasa	-	Statistical Survey Officer
Mr. B.H. Perera	-	Statistical Survey Officer
Mrs. W.W.C. M. Mendis	-	Statistical Investigator
Miss A.R.T. Wijebandara	-	Typist

INTERVIEWERS :

Ms. K.P. Perera	-	Public Health Midwife - Team Leader
Ms. H.C. Somawathie	-	Public Health Midwife
Ms. D.C. Hemawathie	-	Public Health Midwife
Ms. D.P. Malini Samarakone	-	Public Health Midwife
Ms. E.A. Malani Edirisinghe	-	Public Health Midwife
Ms. M.R.L. Padmaseeli	-	Public Health Midwife





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