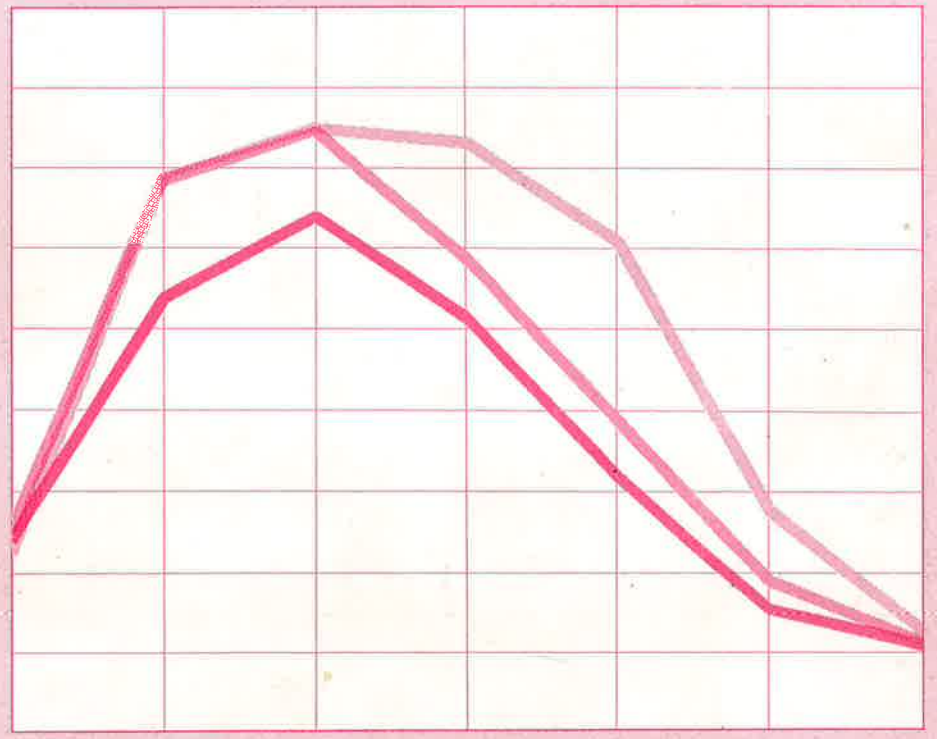
Sri Lanka Demographic and Health Survey 1993



Department of Census and Statistics
Ministry of Finance, Planning, Ethnic Affairs and National Integration
in collaboration with
Ministry of Health, Highways and Social Services

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February 1995

PREFACE

The Demographic and Health Survey 1993 was conducted by the Department of Census and Statistics in collaboration with the Ministry of Health, Highways and Social Services. The major objective of this survey is to provide up-to-date and accurate data on fertility, contraception, child mortality, child nutrition and health status of children. This sample survey is further intended to serve as a source of demographic data for comparison with earlier surveys, particularly with Sri Lanka Demographic and Health Survey 1987, in order to understand the demographic changes over the recent past. The information collected is intended to assist policy makers, planners, administrators and research scholars in assessing and evaluating population and health programmes. The necessary funding for the survey was provided by IDA/World Bank under the Health and Family Planning Project of the Ministry of Health, Highways and Social Services.

The basic findings have already been presented to those concerned through a preliminary report and a seminar held in Colombo. This report is the first comprehensive analysis derived from the information collected. The entire analysis of the data has been successfully carried out by the staff of the Population Census Division of the Department, which would not have been possible without the hardwork and dedication of those who involved.

It is indeed a great pleasure to see the outputs of a survey being discussed and utilized. I hope that the findings contained in this report are put to pragmatic use in improving the demographic and health situation of the country.

Finally, I wish to extend my sincere thanks and appreciation to all officers who have actively contributed at different stages of the survey, to make it a success.

A.G.W. Nanayakkara
Director of Census and Statistics.

Department of Census and Statistics
P.O.Box 563,
Colombo 7.
27 February 1995

ACKNOWLEDGEMENTS

Many individuals made valuable contributions to the implementation of the Demographic and Health Survey 1993. While all such contributions are greatfully acknowledged, some major contributions are mentioned below.

The IDA/World Bank provided the funding for the survey under the Health and Family Planning Project of the Ministry of Health, Highways and Social Services. Dr. A.T.P.L. Abeykoon, Director, Population Division of the Ministry of Health, Highways and Social Services co-ordinated the work with continued interest.

The Director of Census and Statistics, Mr. A.G.W. Nanayakkara was the Project Director of the Survey. His predecessor Mr. A.A.D.C. Yasasiri was in that capacity until his retirement in January 1994.

Planning, execution, analysis and the successful completion of the survey was carried out by the Population Census Division of the Department of Census and Statistics under the guidance and direction of Mr. H.R. Gunasekera, Deputy Director who was the Project Manager of the Survey. The core team consisted of Mrs. S. Ukwatta, Mrs. J. Nagendran, Mr. T. Thanapalasingham, Mr. C.N. Galahitiyawa, Statisticians and Mr. W.D.P.de A. Goonatilleke, Mr. A.M.U.K. Alahakoon, Mr. J. Askey, Mr. W.C. Weerawansa and Mrs. C.K. Kahanda, Statistical Officers. They were ably assisted by the Statistical Investigators and the other supportive staff of the Population Census Division.

Dr. Vijay Verma, Consultant, provided valuable service in the design of the sample.

The field work was carried out by the Statistical Investigators of the Department of Census and Statistics under the supervision of either a Statistical Officer or a Statistician. The district Statistical Officers/Statisticians made logistical arrangements for field work within their respective districts.

The UNICEF provided the measuring boards necessary for recording the heights of children and assisted in the training of accurately obtaining the anthropometric measurements.

The Data Processing Division under the direction of Mrs. S.V. Nanayakkara Deputy Director (in charge) and under the supervision of Mr. W. Sumanasiri, Deputy Director was

responsible for the data entry and computer editing of data. The necessary computer programmes for data entry and editing were designed by Mr. S.A.S. Bandulasena and Mr. W.H.P.W. Weerasiri Programmer/Systems Analysts. The computer tabulations of data were produced by Mr. W.D.P.de A. Goonatilleke, Statistical Officer of the Population Census Division. However, more complex tabulations involving the demographic rates, nutritional indices and sampling errors were performed by Mr. H.R. Gunasekera, Deputy Director.

This report was prepared by a team of officers and the authors of different chapters are;

Chapter 1 :	Background	-	Mr. H.R. Gunasekera and Mr. T. Thanapalasingham
Chapter 2 :	Fertility	-	Mr. H.R. Gunasekera
Chapter 3 :	Family Planning	-	Mrs. S. Ukwatta
Chapter 4 :	Other Proximate Determinants of Fertility	-	Mrs. J. Nagendran
Chapter 5 :	Fertility Preferences	-	Mrs. L.P.de Silva
Chapter 6 :	Infant, Child Mortality and Maternal and Child Health	-	Mr. H.R. Gunasekera and Mrs. S. Ukwatta
Chapter 7 :	Feeding Patterns and the Nutritional Status of Children	-	Mr. H.R. Gunasekera

Summary of Findings : Dr. A.T.P.L. Abeykoon

The report was edited by Mr. A.G.W. Nanayakkara and Dr. A.T.P.L. Abeykoon, assisted by Mr. H.R. Gunasekera.

Supporting services were provided by the Accounts, Transport and Stores Divisions of the Department.

The printing of this report was carried out by the staff of the Printing Division under the direction of Mr. K.D. Siripala, Deputy Director. The computer type-setting was accomplished by Mr. W.C. Weerawansa, Statistical Officer and the preparation of graphs and charts for colour printing was done by Mr. S.D. Rajapaksa, Statistical Draughtsman attached to the Population Census Division.

Finally, the valuable co-operation of the respondents of the survey are deeply appreciated.

TABLES

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Appendix A

FIGURES

SUMMARY OF FINDINGS

The first comprehensive survey on fertility and family planning was conducted in 1975 by the Department of Census and Statistics. Since then the Department has conducted similar surveys in 1982, 1985 and 1987. The 1993 Demographic and Health Survey therefore, is the fifth in the series.

The major objective of this survey has been to provide up-to-date and accurate information on fertility, nuptiality, family planning, child nutrition and health status of children. The survey data also provides a useful basis for comparison with data from previous surveys.

The sample comprising 9,230 households and 7,078 eligible women in 9,007 housing units was based on a representative multistage stratified probability sample excluding the northern and eastern provinces. The population was stratified into seven zones on the basis of socio-economic and ecological criteria. Each zone was further stratified into urban, rural and estate sectors. The completed number of households and eligible women interviewed were 8,918 and 6,983 respectively. The overall response rate was 97.6 percent with a household response rate of 98.9 percent and an eligible women response rate of 98.7 percent.

Two types of questionnaires were used in the survey. The household questionnaire and individual questionnaire. The household questionnaire listed all usual residents and any visitors who slept in the household the night before the interview. An eligible respondent was defined as an ever married woman aged 15 to 49 years who slept in the household the night before the interview.

The level of fertility measured by total fertility rate is estimated at 2.3 for the period 1988 to 1993. When compared with previous data, it is evident that the total fertility rate has declined significantly from a level of 5.0 in 1963. It is also evident that for the first time age specific fertility rates have declined in all age groups.

The median birth interval is 37 months. However, the interval is shorter for younger women, women living in the estates and for women who have had no education or those with only primary education. The median age at first birth is highest (26.3 years) for those in the age group 25-29 and lowest (23.5 years) for those aged 45-49 years, indicating that age at first- birth has been increasing.

The Colombo metro area has the lowest total fertility rate of 2.0. The rural sector has a total fertility rate of 2.3 and the estates 2.6. The decline in fertility during 1982-87 and 1988-93 periods show that it has occurred mainly in the estates (23.5 percent) and rural areas (20.7 percent). In terms of zones, the lowest fertility level is found in zones 1 and 2 with a total fertility rate of 2.0 in Colombo metro and Colombo feeder areas respectively. High fertility is noteable in zones 6 and 7 with total fertility rates of 2.8 and 2.6 respectively. These are irrigated dry zone and rainfed dry zone areas.

Contraceptive knowledge is almost universal with 99 percent of all ever married and currently married women knowing at least one modern method. However, only about 72 percent of ever married and currently married women know of a traditional method. The best known method among modern methods is female sterilization (97.3 percent) and the least known method is norplant (10.5 percent). Of the traditional methods, the best known methods are safe period (65.9 percent) and withdrawal (51.3 percent). During the period 1987 to 1993, the knowledge of traditional methods has increased by 4 percentage points mainly due to increase in knowledge of withdrawal which increased by 12.5 percentage points. It is also seen that younger women are less likely to know of a traditional method than older women. A clear direct relationship between educational levels and knowledge of modern methods is seen among currently married women. A similar relationship is evident with parity as well.

Knowledge regarding source of supply among ever married women show that the highest level of knowledge of government source is for sterilization (93.0 percent) followed by IUD (81.5 percent), injectable (78.0 percent), pill (68.5 percent), norplant (62.5 percent) and condom (26.9 percent). With regard to acceptability of methods, it is evident that access or availability, cost, inconvenience in use are not seen as problems by large majority of ever married women. However, health issues are perceived as problems in using methods such as pill (30.7 percent), IUD (20.5 percent), injectable (27.7 percent) and female sterilization (15.9 percent).

The ever use of any method of family planning among ever married women is 76.2 percent with an increase of 6.1 percent during the period 1987-1993. Ever use of any modern method is 56.9 percent with an increase of 12.9 percent during the same period. Among currently married women, 78.3 percent have ever used any method of family planning, while 58.5 percent have ever used any modern method and 44.9 percent have ever used any traditional method.

The contraceptive prevalence rate for 1993 was 66.1 percent, an increase of 4.4 percentage points from the rate in 1987. Of the total prevalence, 22.4 percent of currently married

women use a traditional method. Of the modern methods, prevalence of sterilizations dropped from 29.8 percent to 27.2 percent during the period 1987 to 1993. However, the prevalence of modern temporary methods has increased from 10.8 percent to 16.5 percent. A slight increase of 1.3 percentage points is also evident for traditional methods.

The current use of contraception by age show that the highest level of prevalence is in the age group 35-39 years (76.7 percent). As expected, the lowest prevalence is in the age group 15-19 with a rate of 30.3 percent. However, it is interesting to note that in this youngest age group, contraceptive use has increased by 50 percent during 1987 to 1993. Contraceptive use by sector, show that the highest use of contraception is in the rural sector (68.3 percent) while the lowest is in the estate sector with 54.5 percent. With regard to parity, the highest use is found among women with three living children (80.0 percent). A clear inverse relationship between educational attainment of the women and contraceptive use is seen with regard to modern spacing methods. However, those with no education and with primary education show higher use of sterilization compared to those with higher level of education.

Nearly 35 percent of ever married and currently married women have ever used safe period as a method of contraception. It was observed that about 72 percent of ever users could correctly identify the fertile period in the menstrual cycle.

Government sector is the primary source of contraception for large majority (83.0 percent) of current users. For supply methods, 60.2 percent of current users obtained supplies from government sources. For clinical methods, 92 percent used a government source to obtain their supplies.

The singulate mean age at marriage for females is 25.5 years which show an 0.7 years increase from 1987. The overall mean duration of breastfeeding is 23.1 months, an increase of 0.4 months from the level in 1987. Due to the long duration of lactation, the mean duration of amenorrhea is 6.7 months. The mean duration of abstinence is 5.7 months and insusceptibility is 8.8 months. There is no marked difference in the mean duration of breastfeeding by age. With regard to sector, it is seen that Colombo metro women have the least mean duration (16.4 months) while the women in the rural areas breastfeed for an average of 24.6 months. The estate women have an intermediate duration of 22.0 months.

The data on induced abortion, possibly under reported, show that about 84 percent of those resorting to it are over 30 years of age, about 30 percent are in the Colombo metro area and

another 40 percent are in the estates. About 57 percent have no education or only primary education and about 15 percent have no children.

With regard to fertility preferences, it is seen that 42 percent of currently married non-users of family planning want no more children and another 23 percent want to space births. Among currently married current users, it is evident that 36 percent (excluding those sterilized) want no more children. This is an increase of about 17 percent from 1987. Another 16 percent want to space births. Those users with no education, 22 percent want no more children and 5 percent want to space births. The currently married women who want no more children increases rapidly with parity from 16 percent for those with one child to about 70 percent for those with two children and to 97 percent for those with 4 or more children. About 11 percent of currently married women were in need of family planning and intended to use contraception. The need was higher in the estates and in zones 6 and 7. The mean ideal number of children for ever-married women with two living children was 2.5 compared to 2.8 children for all ever married women.

Mortality levels measured by the survey show an infant mortality rate of 25.3, child mortality rate of 4.0 and under five mortality rate of 29.5 per 1000 live births during the five years preceding the survey. By socio-economic zones, it is seen that infant and under-five mortality levels are highest in zone 5 where many of the estates are located. A clear inverse relationship is observed between mother's education and the mortality of children. Infant mortality rate is nearly two and half times higher for those mothers with no education compared with those having more than secondary education. Male infant mortality rate is 54 percent higher than the corresponding rate for females.

As regards prenatal care, it is observed that almost all mothers (99.6 percent) who had births in the five year period preceding the survey received prenatal care. About 65 percent of mothers who had births during the past 12 months preceding the survey received two doses of tetanus immunization. About 94 percent of the births that occurred during the past five years preceding the survey, took place in an institution. Of these, 87 percent took place at a government facility and 7 percent at a private nursing home.

Immunization of children which was assessed by the health card showed that 82.3 percent of children had such a card. All children who had a health card had been immunized with B.C.G. Among them, 86.6 percent had received three or four doses of DPT, 86.3 percent three or four doses of polio and about 80 percent had received the measles vaccination.

The prevalence of diarrhoea among children under 5 years of age during the preceding 24 hours and preceding 2 weeks was very low with 1.8 percent and 3.2 percent respectively. Overall, about 71 percent of children who had diarrhoea in the past two weeks were treated at a medical facility. Knowledge of mother about ORS packets was very high with an overall percentage of 94.

With regard to feeding patterns and nutritional status of children, it is seen that 98 percent of children were ever breastfed. About 55 percent of children born in the five years preceding the survey were given colostrum. The three major reasons given by mothers for stopping breastfeeding are refusal by the child, mothers pregnancy and insufficient milk of the mothers. These three reasons together account for 60 percent of the total reasons for stopping breastfeeding. At the overall level, the mean birth weight is 2.8kg. However, 18.7 percent of newborns have low birth weight (below 2.5kg).

The nutritional status of children below 5 years of age indicate that 15.5 percent of children are acutely undernourished and 23.8 percent are suffering from chronic malnutrition. the survey data also revealed that 37.7 percent of the children are underweight. However, in comparision with the nutritional status of children in 1987, it is seen that at the overall level, the nutritional levels with respect to both height for age and weight for age have improved between 1987 and 1993, but weight for height shows slight deterioration.

In conclusion, it can be said that when compared with data of the Demographic and Health Survey of 1987, there has been an overall improvement in demographic and health status of the population in 1993. However, in almost all areas there is room for improvement and further analysis of this data would be required to identify the causal linkages among the crucial variables so that appropriate programetic action could be initiated.

CHAPTER 1

BACKGROUND

H.R. Gunasekera and T. Thanapalasingham

1.1 History, Geography and Economy

The pear-shaped island of Republic of Sri Lanka or Ceylon as it was known for many centuries has a history that stretches back about 2500 years. Since the 15th century, several foreign invasions of the country have taken place and it's maritime areas have been ruled in succession by the Portuguese from 1505 to 1608, the Dutch from 1608 to 1796 and by the British from 1796 to 1815. In 1815, the British brought the entire country under their control after conquering the central Kandyan kingdom and ruled the country until independence was obtained in 1948.

Sri Lanka is situated off the Southern Coast of India between northern latitudes 5° 55' and 9° 50' and eastern longitudes 79° 42' and 81° 52'. The island is separated from India by about 35 kilometre stretch of sea known as Palk Straight. It covers a land area of 65,608 square kilometres, stretching a maximum length of 435 kilometres and a width of 225 kilometres. It's location in the centre of the Indian Ocean and it's proximity to the Indian Sub-Continent had been an important factor determining it's wide variation in climatological condition. The mean temperature over the lowlands is 28° C while the lowest mean temperature, at Nuwara-Eliya, the hill station in the island at an elevation of 1890 metres is 16° C.

Three distinct agro-climate zones can be identified in the island. They are: 1) the wet zone which covers the southwestern parts of the island and receives the highest rainfall from two monsoons annually; 2) the dry zone which covers the entire northern and eastern parts of the island to form an extensive plain and receives an annual rainfall of less than 2000 millimetres and depend on surface water for more than half of the year; and 3) the intermediate zone which covers the region between the wet and dry zone areas surrounding the central hills at an elevation ranging from 300 to 900 metres. Almost all the tea and rubber plantations are situated in the wet zone and intermediate zone areas.

After independence, the country has made significant improvements in social developments such as the developments in public health care system and education. The post war period saw the eradication of malaria as well as major expansion in health services, particularly in the dry

zone areas, where the mortality levels prevailed at a higher level and as the result of the introduction of free education the rapid improvements in the national literacy rate of the country and the increasing trend in the percentage of the population with higher educational attainment. The achievements in education increased the percentage of female participation in social, economic and political activities as well as in the labour force participation at all levels. Sri Lanka's crude birth rate (the number of live births per 1000 population), crude death rate (the number of deaths per 1000 population), growth rate and infant mortality rate (the number of deaths under one year per 1000 live births) are very low among the developing countries. These social indicators reflect the achievements due to social welfare oriented policies and programmes of successive governments since independence.

Sri Lanka's economy for over a longer period was predominantly agricultural where two sectors, the export oriented plantation sector and the traditional sector existed. The export oriented sector consisted the tea plantation on the mountain slopes, rubber plantation in the intermediate zone, and coconut plantation in the western coastal belt constitute the backbone of the country's economy. The traditional sector consisted of peasant cultivation of paddy and other food crops mainly for domestic consumption. The contribution by this dual economy to G.D.P. was 22.3 percent in 1993.

In recent years, diversification of economy, with an emphasis on industrial expansion, has engaged the attention of the government in order to relieve the heavy dependence on the export oriented plantation sector. Since 1977, the government has adopted the policy of open economy with an aim of encouraging foreign investment and promoting the growth of private sector. Three free trade zones have been set up, two in the suburbs of the capital city, Colombo and the other in the southern part of the country. At the same time greater attention was also given to develop the rural sector. An important rural development project is the Mahaweli river diversion project, with the intention of providing irrigation to major part of the dry zone agricultural areas. In addition, the implementation of integrated rural development projects also helped to develop the rural areas. The share that agricultural sector contributed to Gross Domestic Product has dropped from 27.2 percent in 1983 to 22.3 percent in 1993 and that from the industrial sector rose from 17.5 percent in 1983 to 19.8 percent in 1993, mainly due to the above diversification of economy.

1.2 Population Size and Distribution

Sri Lanka is having reliable demographic data for a considerable period to time. The main sources of population information are the decennial censuses which started in 1871 and the

collection of vital statistics by the Registrar General since 1867. A number of sample surveys carried out in the country in the recent past have also become major sources of demographic data. Out of these, Sri Lanka World Fertility Survey of 1975, Sri Lanka Contraceptive Prevalence Survey of 1982 and the Sri Lanka Demographic and Health Survey conducted in 1987 are the most important surveys, for the purpose of comparison of the present Sri Lanka Demographic and Health Survey 1993.

The total population enumerated in Sri Lanka at the first decennial census, conducted in 1871, was 2.4 million. The 12th series of this decennial censuses was conducted in 1981 and the population enumerated in that census was 14.8 million, which was six fold of the population size in 1871. The average annual rate of growth of the population fluctuated during the past eleven decades. Prior to the World War II, this growth rate was fluctuating between 0.9 and 1.7 percent. The 1946 census enumerated the country's population as 6.7 million. After the War, the dramatic decline in death rate due to the improved medical and public health services and the island-wide Malaria eradication campaign launched at the time, together with the sudden increase in the fertility rate pushed up the size of the population to 8.1 million by 1953, at an average annual growth rate of 2.8 percent. The population continues to increase but at a lower growth rate of 2.5 percent and 1.7 percent during the periods 1953 to 1971 and 1971 to 1981 respectively. This decline in the growth rate has been, to a great extent, caused by the heavy repatriation of Tamils of Indian origin and the employment oriented migration to Middle-East countries. The mid-year population in 1991 and 1993, estimated by the Registrar General, were 17.2 million and 17.6 million respectively and the corresponding growth rates were 1.5 and 1.1 percent. Since 1981, the migration out of the country has also played a key role in reducing the growth rate of the population. Sri Lanka's population is very young in age with 46 percent of them being of age less than 20.

The distribution of population, as in most countries, is highly uneven. The percentage of population in the wet zone continued to increase from 58.4 percent in 1871 to a peak value of 66.3 by 1946. This two third of the Sri Lanka's population in the wet zone occupied less than one fourth of the total land area, which is in the southwest part of the country. This figure started to decline from the 66.3 percent to 57.3 percent by 1981. The movement of the population towards the dry zone due to the developments in dry zone agriculture, colonization schemes and the improvements of irrigation facilities and the control of malaria in dry zone areas were the main cause for the drop in the wet zone population size.

At the 1981 census, the population density of Sri Lanka was 230 persons per square kilometre. This figure varies considerably among the districts, ranging from 2605 persons per square kilometre in the mostly dense area, Colombo district, in the western province to 36 in the least inhabited area, Vavuniya district, in the northern province. The southwest coastal and hilly districts and the northern tip district of Jaffna in the dry zone are the densely populated areas. Further, wet zone areas showed very high density, nearly five times as that of dry zone areas.

Sri Lanka is a multiracial country. It's population consists several ethnic groups. The 1981 census of population enumerated 74 percent of the population as Sinhalese, 12.7 percent as Sri Lanka Tamils, 5.5 percent as Indian Tamils, 7.1 percent as Sri Lanka Muslims, and 0.8 percent as Burghers, Malays and Others. There is a strong link between ethnicity and religion. The Sinhalese are predominantly Buddhists, the Tamils predominantly Hindus and the Moors exclusively Muslims. The religious affiliations of the population of Sri Lanka as enumerated in the 1981 census show that 69.3 percent of the population are Buddhists, 15.5 percent are Hindus, 7.5 percent are Muslims, 6.9 percent are Roman Catholics, 0.7 percent are other Christians, and Others constitute 0.1 percent.

Examination of urban, rural distribution shows that in 1871, 10.8 percent of the island's population was residing in the urban sector. This figure gradually increased to 15.3 by 1953 and little faster thereafter to 22.4 in 1971. This increase of 7.1 percentage points during the 18 year period (1953-1971) was mainly due to the inclusion of Town Council areas, which were treated as rural upto 1953 and the annexation of adjoining rural areas to many cities. The number of urban areas increased from 43 to 135 during the above mentioned period. At the 1981 census, percentage of urban population of Sri Lanka was 21.5. The percentage of urban population in most districts is much below the national average and wide variations also exist in the percentage of urban population among districts. The highest percentage of 74.4 was found in Colombo district while the lowest figure 2.2 was for Moneragala district. In ten out of all the 24 districts, less than 10 percent of the population live in urban areas.

1.3 Fertility, Mortality, Literacy and Education

The crude birth rate indicates that the fertility in Sri Lanka during 1900-1950 was high, fluctuating between 33 (in 1912) and 42 (in 1926). The first decline, albeit modest, in crude birth rates began in 1950's. During 1951 to 1961 it dropped by 10 percent. However, the fertility decline gathered momentum in 1960's, recording a 16 percent drop in the crude birth rates. In the 1970's it remained more or less stable around 28. Subsequently a drastic decline was recorded in fertility

in the 1980's where the crude birth rate declined by about 25 percent from 28.2 in 1981 to 21 in 1991. The initial fertility decline in Sri Lanka is mainly due to the changes in the female age structure and the rising age at marriage; thereafter the fall in marital fertility through a vigorous family planning programme became the predominant contributor.

The crude death rate indicates that the mortality in Sri Lanka during 1900-1945 was generally high, fluctuating between 36.5 (in 1935) and 18.1 (in 1942). The most significant feature of the mortality trends in Sri Lanka is the dramatic fall in death rates in the immediate post-world war years. Between 1946 and 1949, the crude death rate fell from 19.8 to 12.4, the infant mortality rate from 141 to 87, and the maternal mortality rate from 15.5 to 6.5. These unprecedented advances have been attributed mainly to the eradication of malaria, extension of health services in the rural areas and improved nutrition. The mortality in Sri Lanka continued to decline during the last five decades, although the pace of the decline has slowed down. The current levels of crude death rate, infant mortality and maternal mortality remain at 5.6, 17.2 and 0.4 respectively. With these declines in mortality the average life expectancy has increased from 43 years in 1946 to 72 years in 1991. Another important feature of mortality in Sri Lanka is its sex differential. Until the early 1960s, Sri Lanka was one of the few countries where life expectancy at birth was higher for males than for females; subsequently, further improvements in mortality turned the advantage to females, creating a difference of about 3 years in 1971, 4 years in 1981 and 5 years in 1991.

The national literacy rate in the country has shown a steady increase from 57.8 percent in 1946 to 87.2 in 1981. This is one of the highest rates among the developing nations in this region. Most important reason for this increase within a short period, was the introduction of free education in the mid 1940's, which encouraged the school enrolment of children from poor families. The female literacy has improved at a greater speed than male literacy rate reducing the difference between the male and female rates from 26.3 in 1946 to 7.9 in 1981. At the 1981 census, the literacy rates of male and female were 91.1 and 83.2 respectively.

Education is one of the most important measures of social and economic development. The government is paying a great attention to education because the primary responsibility of developing the human resources required for the country's future welfare rests on education. The introduction of free education from year one to university education in 1945 ensured a steady increase of school attendance and achievement of higher educational attainments. In 1981, 10.2 percent of the population aged 30 and over has achieved higher level of education viz; passing General Certificate of Education (O/L) examination and above. In addition to this, the government provides free text books from 1980 and free school uniforms from 1993 in order to relieve the

burden on poor parents and improving the school enrolment of children. In 1993, 4.3 million of children and pupil bhikkus, about one fourth of the population, attended 10,042 schools and 498 privenas throughout the country. A total number of 32,867 students attended all the eight universities in the country, in all streams, during the academic year 1990/91.

1.4 Population and Family Planning Policies and Programmes

The successive governments that came to power have expressed concern over the implications of population growth for national development and the quality of life. Any policy directly concerned about any one of the components fertility, mortality and migration can be regarded as population policy although generally fertility control policies are referred to as population policies. The government recognises the importance of a further reduction of fertility to enhance socio economic development and has sought to strengthen and expand the delivery of family planning services, provide incentives for controlling population growth and increase population education. High priority is also accorded to programmes aimed at reducing infant mortality and to maintain comprehensive social welfare services.

There is an explicit policy of intervention to reduce growth rates and adjust the age structure by lowering fertility and infant and child mortality. The family health programme is an integral element of the extensive health and service delivery network that has facilitated the provision of family planning services throughout the country.

The Family Planning Association of Sri Lanka (FPASL), a voluntary organization was established in 1953. The work of this voluntary organization was recognised immediately by the government and a grant was provided in 1954, which was increased in subsequent years. The importance of family planning services in the country was recognised by the government and signed an agreement with the Government of Sweden to arrange a pilot project in community planning. This project showed that it was possible to introduce contraceptive methods within a reasonable period of time.

In 1965, the family planning was accepted as an integrated part of the maternal and child health services of the government and a population policy for a reduced growth rate of population was adopted by the government. Family Planning Bureau, which was later renamed as Family Health Bureau (FHB) was established within the Ministry of Health in 1968 to supervise and co-ordinate the family planning programme. The Sri Lankan government signed an agreement with the United Nations Fund for Population Activities (UNFPA) in 1973 to provide assistance for the successful implementation of the National Family Planning Programme.

The coalition government that came to power in 1970 made the following policy statement in July 1970. "Family Planning facilities should be made available for parents to make use of the advise given on maternal and child health welfare which is in the interest of the mother and child. These facilities will be intensified to reach the parents in rural areas as well as in the estates".

In March 1980, at a seminar on population and development, the secretary to the ministry of plan implementation stated the policy of the government, that came to power in 1977, on population and family planning as: "Firstly, the government is concerned with the rate of population growth and it's policy is to take all meaningful steps to curb unplanned growth of population. Secondly, enhanced family planning services will be provided by the state and financial incentives with a view to controlling the population explosion will be given to individuals who practice family planning. Thirdly, in the field of family planning emphasis of the government will be in the field of service oriented programmes to enable motivated couples to receive family planning services and undergo sterilization voluntarily ..... ".

The policy of the government on family planning program is to educate the people about the effects of the unplanned population growth has on economic development as well as on the quality of life for individuals. The policy also includes the provision of variety of family planning devices to couples so that they can select a contraceptive method of their choice. The government has established district population committees in every district in the country to implement and monitor the population policy of the government. These committees are under the administration of the district heads and represented by various ministries, departments and field officers in this field.

The policy of the government on population is to achieve replacement level fertility, by the year 2000, which means a cohort of women on the average will be having only enough daughters to replace themselves in the population. That is to reduce the Total Fertility Rate (TFR) to 2.1 by the year 2000, which is considered to be replacement level fertility.

It is also the policy of the government on population to decelerate internal migration, maintaining rural population and relocating population from crowded urban areas. The objective is to resettle people from densely populated southwest by providing and developing land, particularly for the landless and unemployed, in the dry zone in the north, east and southeast parts of the country.

1.5 Health Policies and Programmes

The health conditions of the population of a country is determined by the social, economic and environmental factors. The health policy of the government is to provide basic health care services to the entire population of the country to enable the people to lead socially and economically productive life. The government provides free health care services through primary health care facilities at the peripheral level and specialized and intensive care at leading hospitals. Since independence, the health care services in the country has improved to a greater extent. More attention is also being given to basic health facilities of rural population, mainly in preventive and curative care, through an extensive network of public health nurses and midwives. Special attention is also given in reducing infant and child mortality, curtailing severe undernutrition among children and improving maternal health care. Provision of safer drinking water and more sanitary methods of sewage disposal reduced the mortality level from diarrhoeal disease. As a result, infant mortality has declined to 19.3 infant deaths per 1000 live births by 1990 while life expectancy has increased to 69.5 years for males and 74.2 years for females by 1991.

The family health programme is implemented through the existing health infrastructure of the Ministry of Health. The Family Health Bureau is responsible for the overall delivery of family health services in the country. One of the most important health programmes launched by the government, in recent years, is the immunization of all children, in order to reduce the child morbidity and mortality, due to infectious and communicable diseases. This programme is to immunize all infants and young children against tuberculosis, poliomyelitis, diphtheria, whooping cough, tetanus, and measles and pregnant mothers against tetanus. The promotion of breastfeeding and the emphasis on child survival and nutritional status through growth monitoring have also been given high priority. Increase in the availability of food items, rich in nutritional level and the self-sufficiency in the production of rice and other food items, also improved the health status of the population.

1.6 Objectives of the Survey

The major objective of this survey is to provide up to date and accurate data on fertility, mortality, family planning, child nutrition and health status of children. This information is intended to assist policy makers, planners, administrators and researchers in assessing and evaluating population and health programmes as well as to plan new strategies for improving the health and well being of the population. Demographic and Health Survey - 1993 is further intended to serve as a source of demographic data for comparison with earlier surveys such as Sri Lanka

Demographic and Health Survey 1987 (DHS 87) and Sri Lanka Contraceptive Prevalence Survey 1982 (CPS 82). Such comparisons help to understand the demographic changes over a period of time.

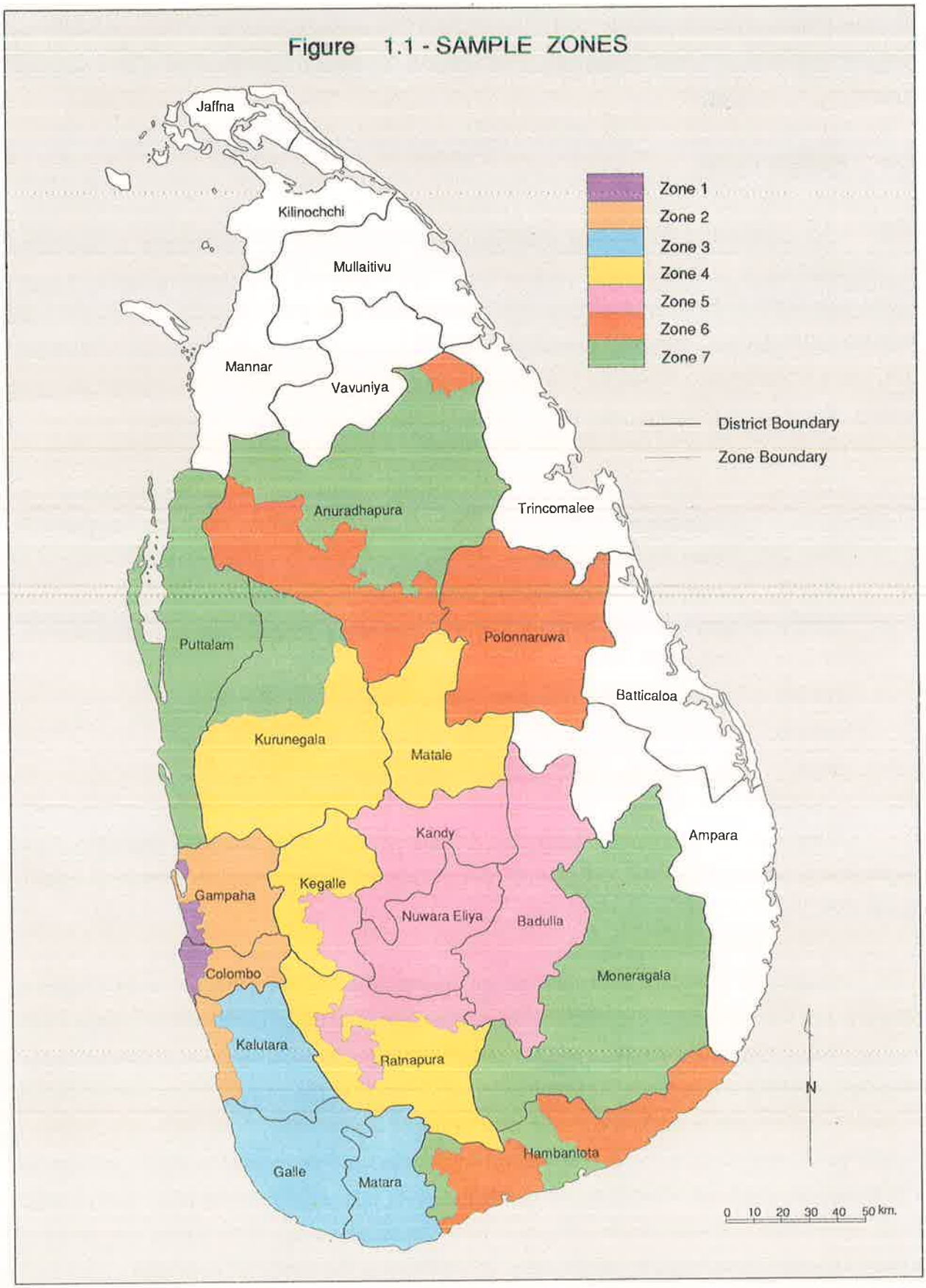
1.7 Sample Design

The sample is a multi-stage stratified probability sample representative of the entire country excluding northern and eastern provinces. The country has been stratified into nine zones on the basis of socio-economic and ecological criteria for DHS 87. The same zones were used without major changes. Although there are nine zones the survey was confined to seven, excluding northern and eastern provinces; the few areas covered in Amparai district in the eastern province during DHS 87 had to be excluded due to security reasons. The seven zones are;

Zone 1: Colombo Metropolitan area consisting some urban areas in Colombo and Gampaha districts
Zone 2: Colombo feeder areas
Zone 3: South Western coastal low lands
Zone 4: Lower South Central hill country excluding districts with a concentration of estates
Zone 5: South Central hill country with a concentration of estates
Zone 6: Irrigated Dry Zone with major or minor irrigation schemes
Zone 7: Rain fed Dry Zone

These zones are shown in Figure 1.1. Each zone was further stratified into (upto) three strata; urban, rural and estate sectors. The number of stages of the design and the Primary Sampling Units (PSU) vary according to the sector.

Analysis of sampling errors and design effects from DHS87 showed that the degree of clustering of the sample can be significantly increased without much loss in the efficiency of the sample. Further, sample outcome of DHS87 also showed that there was a serious problem of under-coverage, possibly due to the factors such as incompleteness of the frame, errors of identification of boundaries of sample areas and incomplete listing of households. Both these considerations suggested the use of units larger than the census blocks used earlier as the PSU's and greater clustering viz; the need of reducing the number of areas selected into the sample. Use of larger areas than census blocks as the PSU has the definite advantage of avoiding the errors of identification of boundaries of sample areas and improving the quality of coverage.



Urban Sector

In urban areas PSU is the ward and generally two census blocks have been selected per ward as the second stage units. The selections were carried out with probability proportional to size (PPS). The number of housing units was taken as the measure of size. The main exception to the above pattern is in certain areas of zone 1. In Colombo urban areas there is little advantage in clustering sample blocks into wards, while in other urban centres such clustering has the major effect of reducing the number of different urban centres coming into the sample. As such, in Colombo urban areas a sample of blocks as the PSU's have been selected directly. This option has been followed for Colombo metropolitan area as well as other urban areas in Colombo district fallen into zone 1.

The PSU's were mostly selected from specially organized frame consisting of wards and Grama Niladhari divisions organized by zone, sector and within sector geographically. This organization provided a better basis for stratification as it is arranged on a geographical basis. The census blocks, on the other hand, were selected from the only frame available from last 1981 Census of Population with some updating of the areas. In the special case of Colombo urban sector it was possible to utilize the areas which were used in the Labour Force Survey 1992, after suitable subsampling to obtain the required number of units. In the final stage of sampling, housing units were selected from census blocks systematically from geographically arranged lists. The ever-married women in the age group 15-49 found in the selected housing units were interviewed. Hence the sample design in the urban sector consisted of three stages with the exception for Colombo district.

Rural Sector

In rural areas, Grama Niladhari (GN) division was taken as a PSU and generally a single village has been selected per sample GN division with PPS. As such in rural areas, villages form the effective PSU's. However, special steps were taken to merge and divide the villages to deal with areas which are too small or too large.

Unlike the GN divisions and wards, the selection in the estate sector has to take into account the fact that many estates are very small in size to form proper units for first stage of selection. To avoid the need to group estates in the whole frame special procedure was applied to select estates depending on the relative size of the estate compared to the nearby estates.

The target sample size was 6500 ever-married women in the age group 15-49. This includes an over-sampling of around 500 women in five less developed areas in zones 6 and 7. The latter addition to the sample is needed to provide policy relevent information and permit comparative analysis of these areas. In order to get that target sample, a total of 9007 housing units were selected for the survey.

The sample is designed to provide independant estimates for seven zones in the country. The weights for each strata (urban, rural and estates) within a zone are shown in Table 1.1.

Table 1.1 Sample Weights

Household and individual weights by zone

Zone	Strata No.	Strata Description	Scaled household weight	Scaled individual weight
Zone 1	11+12	Colombo urban	0.868371	0.893274
	13	Gampaha urban	0.862840	0.869142
Zone 2	20	Urban	1.461233	1.466685
		Rural	1.443516	1.473846
Zone 3	30	Urban	1.114547	1.148405
		Rural	1.115662	1.132677
		Estate	1.114547	1.118705
Zone 4	40	Urban	1.647059	1.653204
		Rural	1.657915	1.670273
		Estate	1.647059	1.653204
Zone 5	51	Urban	1.621299	1.644847
		Rural	1.519402	1.553457
	52	Estate	0.541895	0.543917
Zone 6	61	Urban	0.520607	0.522550
		Rural	0.520932	0.531983
	62	Urban	0.148339	0.148893
		Rural	0.143729	0.149879
Zone 7	71	Urban	0.850054	0.853225
		Rural	0.854262	0.863817
	72	Urban	0.141597	0.146019
		Rural	0.145154	0.149379
		Estate	0.141597	0.142125

1.8 Questionnaires

Two types of questionnaires were used in the Demographic and Health Survey; the Household Questionnaire and Individual Questionnaire. The household questionnaire listed all usual residents and any visitors who slept in the household the night before the interview. Some basic information was collected on the characteristics of each person listed including their age, sex, marital status and relationship to the head of household. The household questionnaire was used to identify women who were eligible for the individual questionnaire. An eligible respondent is defined as an ever married woman aged 15-49 who slept in the household the night before the interview.

The individual woman's questionnaire was administered to each of the eligible respondent. It consisted of eight sections:

1. Respondent's background
2. Reproduction- including details of all live births, infant and child deaths
3. Contraception - knowledge, ever use, current use and a detailed history of inter birth use in the last 5 years
4. Health of children - immunization status, episodes of diarrhoea, breastfeeding, the use of supplementary foods, pre-natal care and assistance at delivery.
5. Marriage
6. Fertility preferences
7. Husband's background and work
8. Length and weight of children 3 through 59 months.

The survey questionnaire is detailed and complex and consisted of 49 pages. The questionnaire was designed to be completed in an average interview time of about 40 minutes.

1.9 Survey Organization and Fieldwork

The Demographic and Health survey - 1993 was conducted by the Population Census division of the Department of Census and Statistics of the Ministry of Finance, Planning, Ethnic Affairs and National Integration as a component of the Health and Family Planning Project implemented by the Ministry of Health, Highways and Social Services. The necessary funding was provided by the World Bank.

The data collection operation was carried out by ten teams during July - September 1993. Each team consisted of five female interviewers, one measurer and an assistant to measure and record the height and weight of children and a supervisor; however one team was entirely used to enumerate the estate sector sample households and it had only four female interviewers. Thus 10 supervisors, 49 female interviewers, 10 measurers and 10 assistants participated in the data collection operation. The interviewers and measurers were drawn from among statistical investigators of the department attached to the field offices and head office divisions. The majority of them had field experience in large scale surveys. The supervisors were either Statistical Officers or Statisticians. A vehicle was given to each team to perform the duties. In addition, a senior officer of the Department was appointed as a co-ordinator for each team to implement the quality control procedures as well as to resolve any logistic problems and to inform the progress to the head office.

Training of field staff lasted for 7 days from 28 June - 4 July 1993. The training for the interviewers consisted of instructions in general interviewing techniques and field procedures, a detailed review of the questionnaire, practice sessions using tape-recorded mock interviews followed by practice interviews of respondents in the field. The field interviews were thoroughly evaluated and explained the errors detected and problems encountered by the interviewers were discussed and necessary corrective actions were taken.

Arrangements were made to deliver special lectures during the training session by experts on reproductive physiology, methods of contraception and anthropometric measurements of children. The training of measurers and assistants on how to measure height and weight of children was carried out with special care. Practice sessions were conducted at two montesoori schools in Colombo. Special attention was drawn to the checking of the completed questionnaires just after the interview. Interviewers were given specific written instructions on the items to be checked before leaving the sample household. In addition, supervisors were asked to edit each questionnaire in the field during the evening following the interview.

All survey activities were completed on schedule and within a relatively short period of time. The calender of activities is shown below:

Survey Design	Jan - Feb 1993
Questionnaire Design	Jan - Feb 1993
Preparation of instruction manuals	Feb 1993
Pre-test of questionnaire	March 1993

Printing of questionnaire and manuals	April 1993
Selection of sample blocks	March 1993
Updating of household lists	Mar - May 1993
Selection of sample households	June 1993
Recruitment of field staff	May 1993
Training of field staff	June 1993
Field work	July - Sep 1993
Computer programming for data entry and editing	Mar - June 1993
Manual editing and data entry	Oct - Dec 1993
Computer editing	Jan - Feb 1994
Tabulations	Mar - April 1994
Preparation of Preliminary Report	May 1994
Preparation of draft final report	Jun - Aug 1994
Preparation of final report	Aug-Dec 1994
Seminar on Findings	Dec 1994

1.10 Data Processing

All completed questionnaires were brought back to the head office of the Department for data processing. Although completed questionnaires were examined by supervisors in the field, these were manually edited in the head office by specially trained office editors. This manual editing covered basic investigations such as checking of identification details, completeness of the questionnaire, checking of certain internal consistencies, checking the information recorded in filter questions and coding of few items. Special attention was paid to the consistency of responses to age questions and the accurate completion of birth history. The entire data processing was done on microcomputers and the data entry and computer editing was carried out using Integrated Micro-Computer Processing System (IMPS) package developed by U.S. Bureau of Ccnsus. Statistical Package for Social Scientists (SPSS) was used to obtain tabulations. The anthropometric indices were calculated using ANTHRO software developed by Centers for Disease Control (CDC) and World Health Organization (WHO).

1.11 Coverage and Response Rates

During enumeration 9230 households and 7078 eligible women were identified in the selected 9007 housing units. The completed household and eligible women interviews were 8919 and 6983 respectively. This yields a household response rate of 98.9 percent and eligible women response rate of 98.7 percent giving an overall response rate of 97.6 percent. The results of responses are shown in Table 1.2 together with the corresponding figures reported for DHS 87.

Table 1.2 Results of the household and individual interviews

Percent distribution of interview status and household, individual and overall response rates

Result of interview and response rate	DHS93	DHS87
Household interviews		
Completed	96.6	94.5
No competent respondent at home	0.2	1.4
Nobody at home	0.9	0.4
Refused	0.1	0.04
Dwelling vacant	1.0	1.3
Dwelling destroyed	0.3	0.6
Dwelling not found	0.3	0.5
Other	0.5	1.3
Total	100	100
Unweighted number of households	9230	8119
Household response rate	98.9	96.3
Eligible women interviews		
Completed	98.7	95.1
Respondent not at home	1.0	3.6
Refused	0.1	0.2
Partly completed	-	0.1
Other	0.2	1.1
Total	100	100
Total unweighted number of eligible women	7078	6170
Eligible Women Response Rate	98.7	95.1
Overall response rate	97.6	91.6

It is seen that the response rates are higher in this survey compared to DHS87. Further the percentages of dwelling vacant (1.0), dwelling destroyed (0.3) are less than the corresponding figures recorded for DHS87 indicating an improvement of the quality of the listing of housing units in the field.

1.12 Sampling Errors

The results from sample surveys are subjected to two types of errors, nonsampling error and sampling error. Nonsampling error is due to mistakes made in carrying out field activities, such as failure to locate and interview the correct household, errors in the way the questions are asked, misunderstanding on the part of either the interviewer or the respondent, data editing and coding errors, data entry errors, etc. Although efforts were made during the design and implementation of the survey to minimize this type of error, nonsampling errors are impossible to avoid completely and difficult to evaluate analytically.

The samples are selected to estimate the true value of the entire population. The sample of women selected in the survey is only one of many samples that could have been selected from the same population, using the same design and sample size. Each one would have yielded results that differed somewhat from the actual sample selected. This variability observed between all possible samples constitutes sampling error. It is not known exactly, but it can be estimated from the survey results. Sampling error is usually measured in terms of *standard error* of a particular statistic (mean, percentage etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which one can reasonably be assured that, apart from nonsampling errors, the true value of the variable for the whole population falls. For example, for any given statistic the value of that same statistic as measured in 95 percent of all possible samples with the same design and sample size will fall within a range of plus or minus two times the standard error of that statistic.

If the sample of women had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the sample design for this survey depended on stratification, stages and clusters. Consequently, it was necessary to utilize more complex formulas. The computer package CLUSTERS, developed by the International Statistical Institute for the World Fertility Survey, was used to assist in computing the sampling errors with the proper statistical methodology.

Sampling errors are presented in Tables A.2-A.11 in the Appendix A for variables considered to be of major interest together with the computing formulas. Results are presented for the whole country, for urban and rural areas, and zones. For each variable, the type of statistic (mean or proportion) and the base population are given in Table A.1. For each variable, Tables A.2-A.11 present, inter alia, the value of the statistic (R), its standard error (SE) and the 95 percent confidence limits (R±2SE) for each variable.

In general, the sampling errors are small, which implies that the results are reliable. For example, for the variable children ever born, the overall average from the sample is 2.604 and its standard error is 0.028. Therefore the 95 percent confidence limits are $2.604 \pm 2 \times .028$ i.e. 2.548 to 2.660. This means that there is a high probability (95 percent) that the true average number of children ever born for all Sri Lankan women falls within the interval of 2.548 to 2.660.

1.13 Household Composition and Population

The household questionnaire of the survey collected some basic demographic characteristics of the members and visitors of each sample household. A household, as defined in the survey, refers to a person or a group of persons who usually live in the same housing unit and have a common arrangement for the preparation and consumption of food. A visitor, on the other hand, is someone who is not a usual resident of the household but temporarily staying with the family. Such visitors are also included in the household questionnaire.

The size and the composition of households by sector are presented in Table 1.3. At the overall level 19 percent of the households are headed by females. Slightly higher proportion of female-headed households is noted for the urban areas (21 percent) than in rural areas (19 percent) whereas estates reported the smallest proportion (15 percent). On the average, a Sri Lankan household is composed of 4.7 persons. About one-quarter (26 percent) of all households have 3 or fewer members. The average size is more for urban households (5.0 persons) than rural (4.7 persons) and estate households (4.4 persons).

Table 1.3 Household composition

Percent distribution of households by sex of head of household, number of usual members and household size, according to sector

Household characteristic	Sector			Total
	Urban	Rural	Estate	
Household head				
Male	78.8	81.0	84.6	80.8
Female	21.2	19.0	15.4	19.2
Total	100	100	100	100
Number of usual members				
1	2.6	3.3	4.9	3.3
2	6.3	7.6	10.1	7.5
3	14.7	14.9	16.5	15.0
4	21.2	21.9	20.6	21.7
5	20.2	22.3	22.2	21.9
6	13.5	14.2	12.9	14.0
7	8.2	8.4	7.3	8.3
8	6.0	3.7	2.3	4.1
9+	7.2	3.7	3.2	4.3
Total	100	100	100	100
Mean size	5.0	4.7	4.4	4.7
Mean size (Census 1981)	5.4	4.9	4.3	4.9
Number of households	1564	6877	477	8918

Table 1.4 shows the de facto household population by age, sex and sector and Figure 1.2 presents the population pyramid for Sri Lanka.

The emerging narrow base in the pyramid reflects the recent fertility decline in Sri Lanka. The percentage below 15 years is largest in estate sector (34.5 percent) followed by rural (30.7 percent) and urban (26.9 percent) sectors indicating a younger age structure of the estate and rural areas compared to urban areas. Table 1.5 compares the percent distribution of the population by broad age groups with that of 1971 and 1981 Censuses of Population. There appears to be a progressive decline since 1971 in the proportion of the young population and, concomitantly, an increasing value of the median age. This decline together with the growth of proportion in the 15-64 age group, contribute to a greater extent in declining dependency ratio, defined as the ratio of persons in the dependent ages (under 15 and 65 and over) to those in the economically active ages

(15-64). The ageing process is emerging as an important issue as a result of continuous decline in fertility and improved mortality levels in the past.

Table 1.4 Household population by age, sex and sector

Percent distribution of the de facto household pupulation by five-year age group, according to sex and sector

Age group	Urban			Rural			Estate			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	8.6	8.0	8.3	9.2	8.7	8.9	11.3	8.6	9.9	9.6	8.5	9.0
5-9	9.3	8.6	8.9	10.3	9.7	10.0	12.7	12.2	12.5	10.2	9.6	9.9
10-14	9.5	9.9	9.7	12.1	11.5	11.8	11.2	13.0	12.1	11.5	11.3	11.4
15-19	11.0	9.0	10.0	10.6	9.6	10.1	8.8	10.4	9.6	10.6	9.5	10.1
20-24	9.2	10.0	9.6	8.8	9.1	9.0	7.4	8.0	7.7	8.8	9.2	9.0
25-29	8.2	8.6	8.4	7.5	7.9	7.7	7.2	8.0	7.6	7.6	8.0	7.8
30-34	8.3	8.5	8.4	7.5	7.7	7.6	7.6	6.2	6.9	7.6	7.7	7.7
35-39	6.6	7.4	7.0	6.3	6.7	6.5	5.8	6.7	6.3	6.3	6.8	6.6
40-44	6.8	7.2	7.0	6.1	6.3	6.2	6.6	7.3	7.0	6.3	6.5	6.4
45-49	5.3	5.6	5.5	4.9	5.2	5.1	4.6	5.6	5.2	5.0	5.3	5.1
50-54	4.0	4.5	4.3	4.3	4.6	4.4	4.6	5.3	5.0	4.2	4.6	4.4
55-59	3.0	3.6	3.3	3.1	3.8	3.5	3.5	3.4	3.4	3.1	3.7	3.4
60-64	3.0	3.3	3.2	3.0	2.7	2.9	3.8	2.7	3.2	3.1	2.8	3.0
65-69	1.9	2.4	2.1	2.4	2.6	2.5	2.5	*	1.8	2.3	2.5	2.4
70-74	1.5	1.5	1.5	1.8	1.7	1.7	*	*	*	1.7	1.6	1.7
75-79	0.9	0.9	0.9	1.1	1.0	1.0	*	*	*	1.0	1.0	1.0
80+	0.7	1.0	0.8	1.1	1.1	1.1	*	*	*	1.0	1.0	1.0
Total	100	100	100	100	100	100	100	100	100	100	100	100
Number	3859	3914	7773	15645	16003	31648	1012	1082	2094	20516	20999	41515

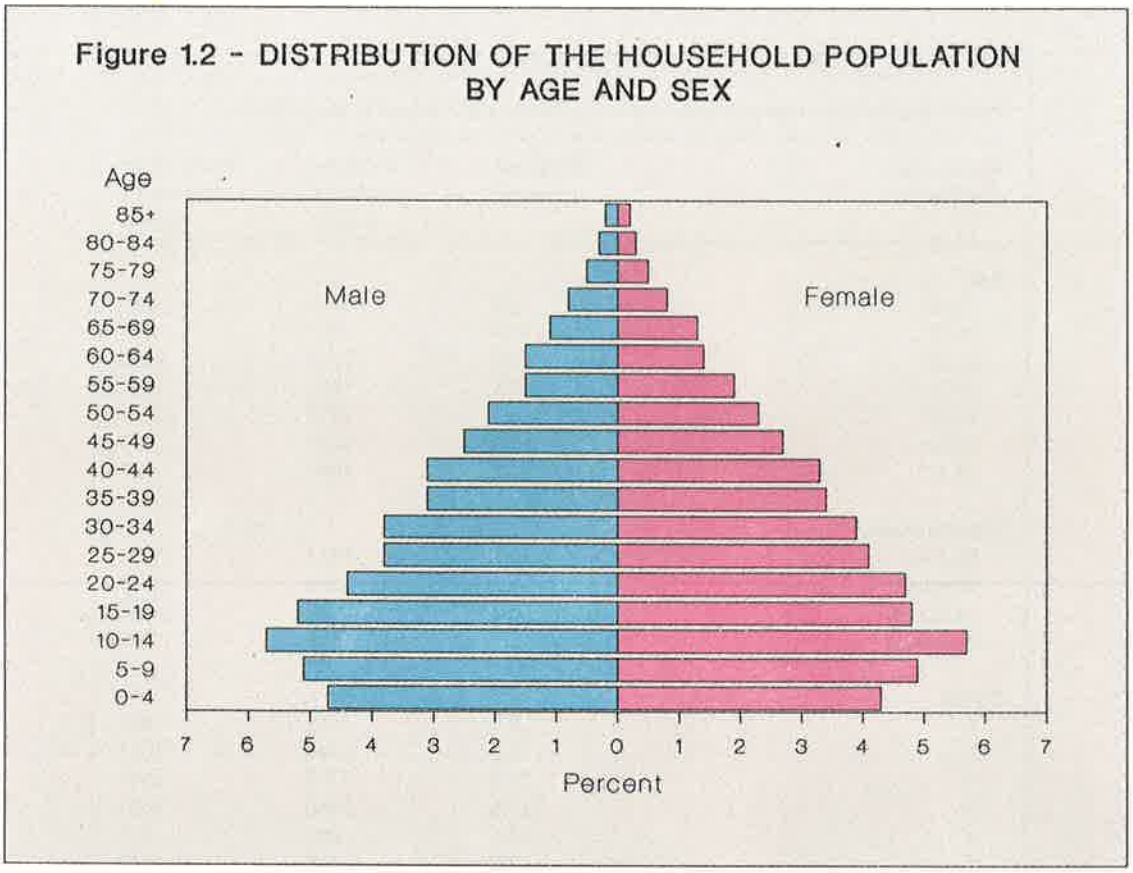
* Less than 25 cases.

Table 1.5 Population by age from selected sources

Percent distribution of the population by broad age group, for selected sources

Age group	Census 1971	Census 1981	DHS 1993
Less than 15	39.0	35.2	30.4
15-64	56.8	60.5	63.5
65+	4.2	4.3	6.1
Total	100	100	100
Median age	19.7	21.4	25.0
Dependency ratio	76.1	65.4	57.4

Source: 1971 and 1981 data are from Department of Census and Statistics (1986)



1.14 Background Characteristics of Women

Table. 1.6 presents the information on selected demographic and background variables of all 6983 eligible women who were interviewed.

Nearly half of these women are below the age of 35, with the largest number concentrated in the 30-34 age group. One third are in their forties. Nearly 92 percent of ever-married women are currently married and the percentage divorced is negligible. Approximately 7 percent are either widowed or separated. The percentage distribution by parity steadily increases upto parity 2 and decreases thereafter. Approximately 19 percent of the respondents live in urban areas, 75 percent in rural areas and the balance 6 percent in estates. The highest percentage of women come from zone 4 which corresponds to lower south central hill country excluding estates and the lowest percentage recorded for zone 6 which covers the irrigated dry zone areas. As expected the majority of respondents are buddhists (80 percent) while catholics follows next (7 percent). Hindus and Muslims are under represented as the Northern and Eastern parts had to be excluded from the survey.

Table 1.6 Background characteristics of respondents

Percent distribution of ever-married women by selected background characteristics

Background characteristic	Weighted Percent	Weighted number of women	Unweighted number of women
Age			
15-19	2.1	146	166
20-24	10.7	751	800
25-29	16.4	1145	1176
30-34	19.4	1352	1330
35-39	18.3	1275	1296
40-44	18.0	1255	1223
45-49	15.2	1060	992
Marital Status			
Married	92.1	6434	6433
Widowed	4.7	331	338
Divorced	0.4	27	26
Separated	2.7	190	186
Parity			
0	9.2	642	622
1	19.6	1366	1331
2	24.6	1718	1647
3	20.6	1440	1461
4	12.9	904	915
5	7.0	487	520
6+	6.1	426	487
Sector			
Colombo metro	12.2	855	965
Other urban	7.2	503	497
Rural	75.1	5242	4904
Estate	5.5	383	617
Education of Mother			
No education	8.1	569	675
Primary	24.2	1687	1907
Secondary	37.3	2602	2487
More than secondary	30.4	2125	1914
Religion			
Buddhist	79.8	5571	5201
Hindu	6.3	443	639
Muslim	5.9	411	510
Roman Catholic	7.2	504	572
Other Christian	0.8	54	61
Zone			
Zone 1	12.2	855	965
Zone 2	16.0	1114	756
Zone 3	13.5	941	829
Zone 4	21.1	1470	881
Zone 5	19.5	1359	1214
Zone 6	6.4	447	1038
Zone 7	11.4	797	1300
Total	100	6983	6983

Table 1.7 shows the variations in the level of education by other background variables. The level of education was defined in terms of the grades completed in school. Four major groups were identified; no schooling (never attended formal school), primary (grades 1 through 5), secondary (grades 6 through 9) and more than secondary (grades 10 and above).

Table 1.7 Level of education

Percent distribution of ever-married women by level of education according to selected background characteristics

Background characteristic	No Education	Primary	Secondary	More than secondary	Total	Weighted number of women
Age						
15-19	5.1	21.5	60.8	12.6	100	146
20-24	8.3	19.7	44.1	27.9	100	751
25-29	6.5	20.6	40.2	32.7	100	1145
30-34	7.0	20.9	37.1	35.0	100	1352
35-39	6.5	24.5	37.2	31.7	100	1275
40-44	8.8	26.1	34.4	30.7	100	1255
45-49	12.9	33.0	29.6	24.5	100	1060
Parity						
0	6.3	13.1	38.1	42.5	100	642
1	4.6	14.6	38.7	42.1	100	1366
2	5.6	18.7	37.8	37.9	100	1718
3	9.1	24.9	40.0	26.0	100	1440
4+	13.1	39.9	33.2	13.8	100	1817
Sector						
Colombo metro	4.1	17.4	37.1	41.4	100	855
Other urban	5.8	17.2	33.6	43.5	100	503
Rural	6.5	24.4	39.7	29.3	100	5242
Estate	42.3	44.7	8.9	4.1	100	383
Zone						
Zone 1	4.1	17.4	37.1	41.4	100	855
Zone 2	2.6	15.1	45.4	36.9	100	1114
Zone 3	6.3	24.8	38.9	30.1	100	941
Zone 4	8.5	22.4	34.8	34.4	100	1470
Zone 5	15.1	29.4	31.9	23.7	100	1359
Zone 6	7.6	32.7	37.7	22.4	100	447
Zone 7	10.2	33.0	38.1	18.7	100	797
Total	8.1 (11.2)	24.2 (29.7)	37.3 (36.2)	30.4 (22.9)	100	6983

Note: Figures within parantheses are from DHS87.

At the overall level, only 8 percent of the respondents have no education which is a quite low compared to the other countries in South Asia region. On the other hand nearly 30 percent have more than secondary level of education. Comparison with the corresponding figures with DHS 87 confirms that the level of educational achievement for the respondents have been increasing over time.

The level of education by age shows that the younger women have higher educational attainment than older women. For example, 72 percent of women in the age group 20-24 have secondary or more education whereas the corresponding figure for the women in 45-49 age group is 54 percent. Lower parity women have better educational levels than women with higher parities. It is interesting to note that among estate women 42 percent have had no education, and another 45 percent reported to have primary education only. As expected urban women are better educated than rural women. Among zones, least educated women are reported in zone 5 where the majority of estates are concentrated.

CHAPTER 2

FERTILITY

H.R. Gunasekera

2.1 Introduction

Estimating the fertility levels, trends and differentials is one of the major objectives of the survey. Such information will help to understand the prevailing levels of childbearing patterns of women and also give clues to determine the impact of changes in the use of family planning and other determinants of fertility. Information on fertility in the survey was gathered by two procedures. First, the respondents were asked to report the total number of live births they had during their lifetime. To minimize bias in misreporting, women were asked a series of questions such as the number of sons and daughters living with her, the number living elsewhere and the number who had died. A follow-up question was also asked to ascertain whether the total number of children enumerated was correct. Second, a complete birth history approach was utilized, in which for each live birth, information was collected on birth order, whether the birth was single or multiple, sex, date of birth, survival status, date of death (for dead children), completed age (for surviving children) and whether the child was living in the household (for surviving children). At the end of birth history section of the questionnaire, there was a final check to ensure that the number of births in the birth history is equal to the total live births recorded in the first procedure. Birth history information provide a richer set of data for analysis. This information was used to calculate measures of current fertility and fertility trends as well as cumulative measures of the number of children ever born.

The birth history information collected in retrospective demographic surveys are subject to certain types of errors. Two such important errors commonly experienced are under-reporting of births, particularly who died at very early ages, and the mistiming of births. The first type of error tends to affect the estimates of fertility levels whereas the errors in the timing of births distort trends. It is hard to distinguish these two types of errors from one another. Both of these problems are less serious for recent time periods when the recalling of events is likely to be reasonably accurate. Maximum precautions were taken during the interviews to record accurate dates of births. The interviewers were trained to check any documents such as birth certificate or health card before recording the dates of birth and also to probe carefully to too short or too long birth intervals.

2.2 Fertility Levels and Trends

The current fertility levels are measured in this report using age-specific fertility rates (ASFR) and total fertility rate (TFR). The TFR is a synthetic measure of current fertility and calculated by summing the age-specific fertility rates. It can be interpreted as the average number of births a woman would have during her reproductive period if she survived throughout that period and she experienced the same age-specific fertility rates prevailing during the period of reference. Table 2.1 and Figure 2.1 present the age-specific fertility rates for the DHS93 together with results from selected surveys. The rates are based on birth history information recorded for the five complete years preceding the survey.

Table 2.1 Current fertility from selected surveys

Age specific fertility rates for selected surveys

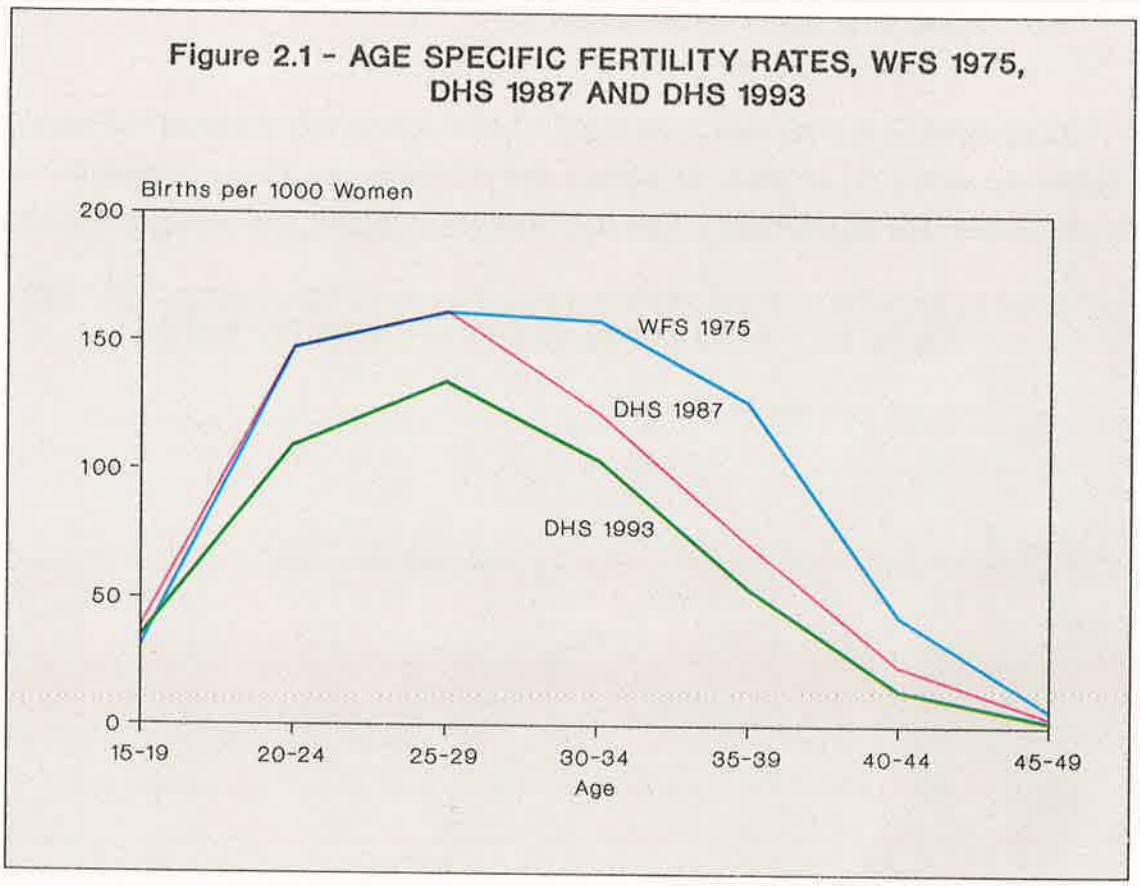
Age group	1988-93 DHS93	1982-87 DHS87	1981 CPS82	1974 WFS75	1963[a]
15-19	35	38	34	31	52
20-24	110	147	172	146	228
25-29	134	161	222	161	278
30-34	104	122	177	158	240
35-39	54	71	99	126	157
40-44	14	23	37	43	46
45-49	4	3	0	6	7
TFR	2.3	2.8	3.7	3.4	5.0

(a) From Fernando (1974)

The interpretations of the data should be undertaken with caution since some of the measures are estimated based on the data from the entire country and calculated for single years (viz; WFS and CPS) while other measures are estimated based on the data excluding northern and eastern provinces (viz; DHS87 and DHS93) and calculated for a period of several years. The TFR for 1988-93 period is 2.3. Therefore, if current age-specific fertility rates were to remain unchanged in the future, the average woman in Sri Lanka would have 2.3 children by the end of her childbearing period. The examination of trends reveals that over the past three decades there has been substantial decline in the total fertility rate in Sri Lanka from 5.0 in 1963 to 2.3 in the period 1988-1993. The notable exception to this trend appears around early 1980's when there was a temporary increase in fertility particularly among women aged 15-34. However, fertility started

to decline once again as evidenced by a TFR of 2.8 during 1982-87 period. This decline is attributed entirely to the decline in the ASFR's of women aged 30 and over. Among women under 30, the ASFR's from DHS87 are essentially the same as the rates reported twelve years earlier by WFS except for the age group 15-19. In contrast, significant declines in ASFR's for women aged below 30 years as well are recorded during 1988-93 period. This is clearly seen in Figure 2.1. The pace of decline in fertility during the last three decades can be investigated using the average annual decrease in TFR between 1963, 1974 (WFS), 1982-87 (DHS87) and 1988-93 (DHS93). The corresponding average rate of decline in TFR are 2.9 percent, 1.8 percent and 2.8 percent respectively. So the pace of decline in fertility between 1982-87 to 1988-93 is quite similar to the pace recorded during 1960's and 1970's.

Figure 2.1 - AGE SPECIFIC FERTILITY RATES, WFS 1975, DHS 1987 AND DHS 1993



Fertility trends can also be investigated using retrospective age-specific fertility rates from a single survey. This is calculated from the data in the birth history collected during the survey and shown in Table 2.2.

Table 2.2 Fertility trends

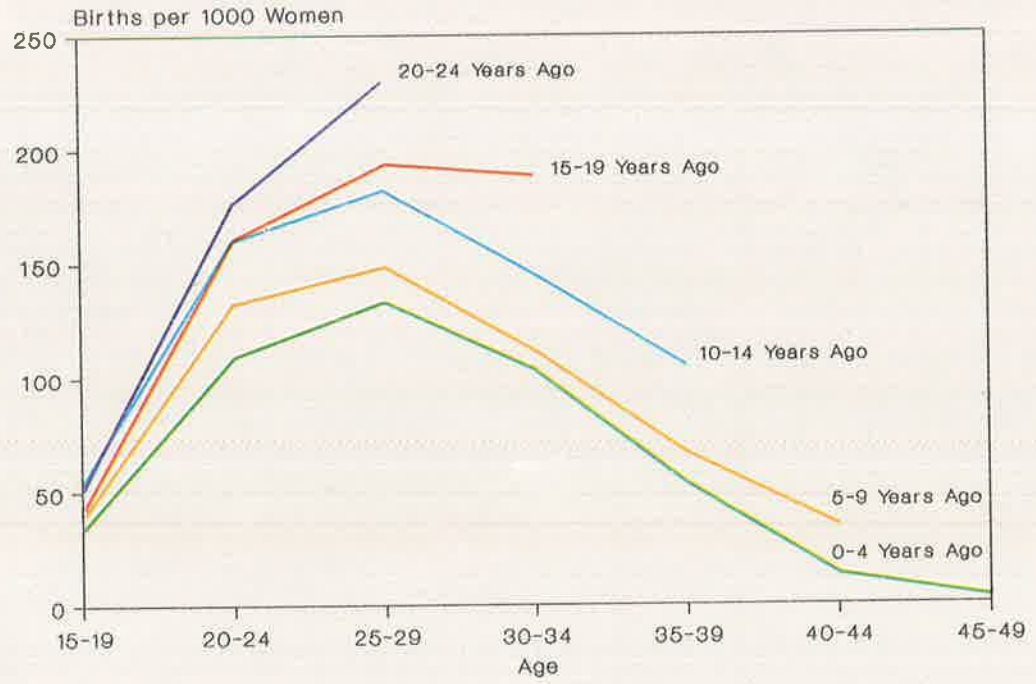
Age specific fertility rates for five year periods preceding the survey, by mother's age at the time of birth

Mother's age at birth	Number of years preceding the survey						
	0-4	5-9	10-14	15-19	20-24	25-29	30-34
15-19	35	40	55	43	52	65	(74)
20-24	110	133	161	161	177	(191)	
25-29	134	149	183	194	(230)		
30-34	104	112	146	(190)			
35-39	54	67	(106)				
40-44	14	(35)					
45-49	(4)						

Note: Figures within parantheses are truncated rates

The age-specific fertility rates in the Table 2.2 are progressively truncated with the elapsed time before the survey. In addition, the bottom diagonal estimates (shown in parentheses) are partially truncated. The data in Table 2.2 are also displayed in graphic form in Figure 2.2. Caution

Figure 2.2 - PERIOD AGE-SPECIFIC FERTILITY RATES



should be exercised when interpreting data because of possible recall lapses resulting in omission or incorrect dating of events, especially by older women and for distant time periods.

Table 2.2 and Figure 2.2 reveal that substantial fertility declines occurred during the last 25 years and the lowest estimated fertility rates in every age group is observed for the most recent five year period. So, one would expect to find monotonically increasing trends over time; but exceptions occur in the period 10-14 years prior to the survey among women who gave birth at ages 15-19 and 20-24. For the first age group fertility rate rises in the period 10-14 years prior to the survey, declines in the 15-19 year period and then continue to increase. For the second age group the fertility rates remain constant for both time periods. The period 10-14 years prior to the survey is 1979-1983 and there was credible evidence from Table 2.1 (corresponding to CPS-1982) that the fertility had actually risen during that period. A similar trend was observed in DHS-87 too. This suggests that the fertility trends observed from the survey are consistent with other sources and gives an indication of reasonably good quality birth history data.

2.3 Fertility Differentials

Differentials in fertility by sector and zone are shown in Table 2.3 and Figure 2.3.

Table 2.3 and Figure 2.3 reveal that Colombo metro area has the lowest total fertility rate of 2.0. So, the fertility in this area has already reached the replacement level. In contrast, the estates have the highest TFR of 2.6 with rural and other urban areas at intermediate levels. In contrary to expectations other urban areas record slightly higher TFR than rural sector. Comparison with the TFR recorded for five years preceding 1987 (from DHS87) reveals that the percentage decrease is highest for estates (23.5 percent) followed by rural areas (20.7 percent). A modest 9.1 percent decrease is seen for Colombo metro areas. Interestingly, the fertility rate in urban areas other than Colombo metro does not show any decline during the recent past. So, the declining of fertility has mainly come from estates and rural areas of Sri Lanka.

By zone, the lowest TFR of 2.0 is in zone 1 and zone 2 which are Colombo metro and Colombo feeder areas respectively. So these zones already achieved the replacement level of fertility. The highest TFR is 2.8 in zone 6 which covers the irrigated dry zone areas. At an intermediate level of 2.2 is zone 3 (the South Western coastal low lands) and zone 4 (the lower South Central hill country), zone 5 (the South central hill country with estates) with TFR of 2.4 and zone 7 (the rainfed dry zone) with a TFR of 2.6. Comparison of corresponding TFR's with DHS 87 reveals that the percentage decrease is highest for zone 5 (25.0 percent) followed by zone 7 (23.5

percent) whereas the declines are modest for zone 6 and zone 1. In fact, zone 6 has the lowest percentage decrease (6.7 percent). So among the dry zone areas the rain fed sector has recorded a faster fertility decline than the irrigated sector where so many settlement areas are located. Further, the fertility decline is highest for areas where the estates are concentrated.

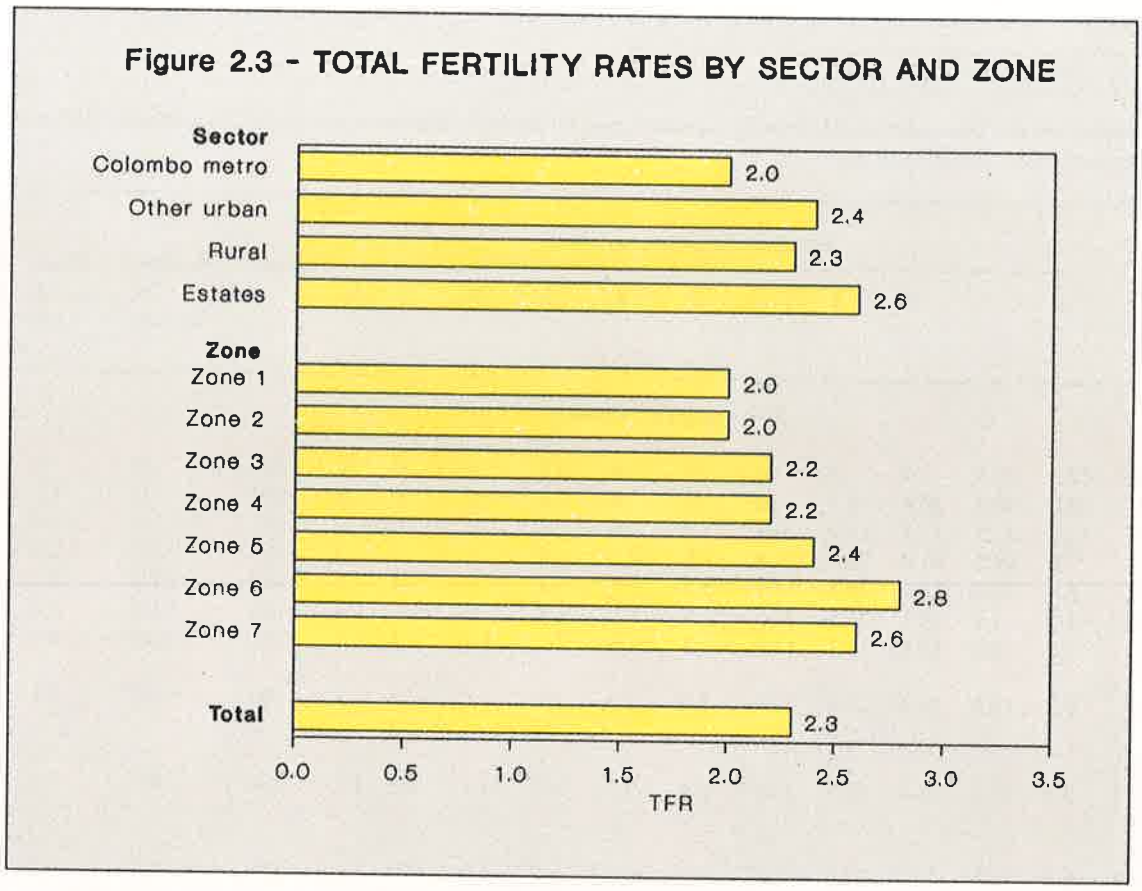
Table 2.3 Fertility by background characteristics

Total fertility rate for the five years preceding the survey and mean number of children ever born (CEB) to women 45-49 years by background characteristics

Background characteristic	Total fertility rate	Mean CEB (women 45-49)	Percent decline	
			TFR	CEB
Sector				
Colombo metro	2.0 (2.2)	3.0 (4.3)	9.1	30.2
Other urban	2.4 (2.3)	3.5 (4.9)	-4.3	28.6
Rural	2.3 (2.9)	4.0 (5.0)	20.7	20.0
Estate	2.6 (3.4)	3.6 (4.9)	23.5	26.5
Zone				
Zone 1	2.0 (2.2)	3.0 (4.3)	9.1	30.2
Zone 2	2.0 (2.4)	3.1 (3.8)	16.7	18.4
Zone 3	2.2 (2.6)	3.4 (3.9)	15.4	12.8
Zone 4	2.2 (2.7)	3.9 (5.0)	18.5	22.0
Zone 5	2.4 (3.2)	4.3 (5.3)	25.0	18.9
Zone 6	2.8 (3.0)	4.7 (6.1)	6.7	23.0
Zone 7	2.6 (3.4)	5.2 (6.6)	23.5	21.2
Total	2.3 (2.8)	3.8 (4.9)	17.9	22.4

Note: 1. Fertility rates are calculated for all women 15-49, using information on women's age and marital status from the household questionnaire and on the number of births from the individual woman's questionnaire.
2. Figures within parantheses are from DHS87.

The second column of Table 2.3 shows the mean number of children ever born (CEB) to women aged 45-49, i.e. women who are approaching the end of their childbearing period. It should be noted that the mean CEB measures shown here are calculated on the basis of all women who were identified in the household schedule, including those who were never married. The mean number of children ever born is an indicator of cumulative fertility. Hence the above measure for women aged 45-49 represents completed fertility. If fertility has remained stable over time, the two fertility measures, TFR and mean CEB for women 45-49 would either be equal or similar. If the fertility has declined, then TFR is less than the mean CEB for women aged 45-49. Hence a comparison of these two measures gives a rough indication of the trend in fertility over the past



several decades. At the overall level, TFR is 1.5 less than the mean CEB indicating the fertility decline in the past. Among the sectors this difference is greatest for women in rural areas and among zones, zone 7 records the highest difference. Therefore, the women in these areas appear to be leading the way for further declines in fertility. The same pattern was observed for zones in DHS87, but the shift of the leading sector for decline is seen from other urban areas to rural sector.

2.4 Children Ever Born

As explained in the previous section mean number of children ever born is an indicator of cumulative fertility. Table 2.4 presents the percent distribution of ever married and currently married women by children ever born and current age group. The CEB is calculated on the basis of ever married or currently married women with completed interviews.

It is observed that the differences between the figures related to ever-married and currently married women are marginal. This indicates that most marital dissolution occurs among older women who have already completed their childbearing. At the overall level, the mean number of

Table 2.4 Children ever born and living

Percent distribution of ever-married and currently married women by number of chlldren ever born (CEB) and mean number of children ever born and living according to age

Age	Number of children ever born											Total	Number of women	Mean no. of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+				
Ever - married women															
15-19	58.3	35.3	6.4	.0	.0	.0	.0	.0	.0	.0	.0	100	146	.5	.5
20-24	23.0	48.8	20.9	6.7	.6	.0	.0	.0	.0	.0	.0	100	751	1.1	1.1
25-29	12.1	32.3	32.9	13.9	6.8	1.3	.5	.3	.0	.0	.0	100	1145	1.8	1.7
30-34	7.8	19.2	31.8	22.9	11.4	5.3	1.1	.4	.1	.0	.0	100	1352	2.3	2.3
35-39	4.6	10.4	26.2	28.5	17.6	8.7	2.4	1.1	.3	.3	.1	100	1275	2.9	2.8
40-44	4.2	9.0	19.1	26.5	20.3	11.4	5.1	2.5	1.0	.3	.5	100	1255	3.3	3.1
45-49	2.7	6.9	16.1	21.3	17.9	13.8	8.3	5.1	3.8	1.7	2.4	100	1060	4.0	3.7
Total	9.2	19.6	24.6	20.6	12.9	7.0	2.9	1.6	.8	.4	.5	100	6983	2.6	2.5
Total DHS 87	8.3	17.2	21.5	19.3	12.9	8.6	5.2	2.7	2.1	1.0	1.1	100	5865	3.0	2.8
Total WFS 75	8.4	14.6	14.0	13.5	11.8	9.9	8.4	6.5	5.2	7.7*	-	100	6813	3.9	-
Currently married women															
15-19	58.2	36.0	5.8	.0	.0	.0	.0	.0	.0	.0	.0	100	141	.5	.5
20-24	23.5	48.8	20.6	6.5	.6	.0	.0	.0	.0	.0	.0	100	722	1.1	1.1
25-29	12.1	32.5	32.9	13.7	6.8	1.3	.5	.3	.0	.0	.0	100	1101	1.8	1.7
30-34	8.0	18.5	31.9	22.9	11.7	5.4	1.1	.4	.1	.0	.0	100	1287	2.4	2.3
35-39	4.7	8.9	26.9	28.9	17.5	9.0	2.5	1.1	.3	.2	.1	100	1173	2.9	2.8
40-44	3.9	8.3	18.6	27.3	20.8	11.4	5.4	2.5	.9	.3	.5	100	1115	3.3	3.1
45-49	2.6	5.9	17.6	21.1	19.2	13.5	7.8	5.4	3.1	1.4	2.4	100	894	4.0	3.7
Total	9.5	19.4	25.0	20.6	13.0	6.8	2.8	1.5	.7	.3	.4	100	6434	2.6	2.5
Total DHS 87	8.5	16.8	22.0	19.7	12.9	8.5	5.1	2.7	1.9	1.0	1.1	100	5442	3.0	2.8
Total WFS 75	8.5	14.2	14.0	13.5	12.0	10.1	8.5	6.3	5.1	7.9*	-	100	6163	4.0	-

* CEB 9+

children ever born to both ever-married and currently married women is 2.6. The corresponding figures for ever-married women in WFS75 and DHS87 were 3.9 and 3.0 respectively. Thus consistent declines in cumulative fertility are apparent during the last 18 years. Table 2.4 also

suggests that child mortality appears to be relatively low; out of the mean value of 2.6 children ever born alive, 2.5 survive. The average number of children ever born gradually increases with the age of the woman reflecting the family building process. The comparison of the distribution of ever-married women by CEB with DHS87 reveals that the percentages increase upto 2 children and the pattern reverse thereafter. Further the percentage of ever-married women with 2 or less children ever born is 53 percent as compared to 47 percent in 1987. These facts confirm further fertility declines after 1987.

Children ever born to women aged 45-49, indicate the completed fertility. Table 2.5 compares the completed fertility experience of women with DHS87, CPS82 and WFS75.

Table 2.5 Children ever born for women aged 45-49

Percent distribution of ever-married and currently married women aged 45-49 by number of children ever born, for selected surveys

Number of children ever born	Ever-married women				Currently married women			
	DHS 1993	DHS 1987	CPS 1982	WFS 1975	DHS 1993	DHS 1987	CPS 1982	WFS 1975
0	2.7	3.3	2.8	3.2	2.6	2.6	2.1	2.3
1	6.9	4.7	5.4	5.4	5.9	4.4	5.0	3.6
2	16.1	9.1	8.0	7.8	17.6	9.5	8.5	6.4
3	21.3	9.1	8.2	7.5	21.1	9.4	8.5	6.9
4	17.9	20.1	11.0	8.8	19.2	21.2	11.0	8.5
5	13.8	13.4	12.7	10.4	13.5	13.7	13.3	11.2
6	8.3	12.5	13.2	13.3	7.8	12.3	13.3	14.4
7	5.1	8.7	9.7	11.6	5.4	8.9	8.7	11.0
8	3.8	9.0	7.1	9.3	3.1	7.8	7.3	9.7
9+	4.1	10.1	21.8	22.8	3.8	10.2	22.2	26.0
Total	100	100	100	100	100	100	100	100
Number of women	1060	639	536	995	896	535	436	817
Mean CEB	4.0	5.1	5.8	6.0	4.0	5.1	5.8	6.3

For both ever-married and currently married women in the 45-49 age group, the mean CEB is 4.0. This shows a decline of 21 percent from 5.1 reported in DHS87 for both ever-married and currently married women. The reduction in completed fertility is reflected in the differences in

parity distributions between the different surveys. Comparison of DHS87 with CPS82 and WFS75 reveals that there is an increase, in general, in the proportion of women with parities 0 though 5 and a concomitant decrease in the proportions with parities 6 or higher indicating fewer women are moving on to higher parities than in the past. (Department of Census and Statistics (1988)). Examination of parity distribution of DHS93 and DHS87 for both ever married and currently married women shows that there is an increase in the proportion of women with parties 1 through 3 and the proportion generally decreases thereafter. In fact, the increases for parities 2 and 3 are very significant (from 9.1 to 16.1 and 9.1 to 21.3 respectively for ever-married women). This indicates that less and less women are further moving on to higher parities in 1993 than in the past. For example, in 1987 the percentage of currently married women with 3 or less children ever born is 25.9 percent and it increases to 47.2 percent in 1993. Table 2.5 also shows that only 2.6 percent of currently married women have never had a child. This percentage remains relatively stable during the last two decades. This low level of childlessness indicates that primary sterility is low in Sri Lanka.

The changes in completed fertility during the last two decades discussed above are reflected in Table 2.6 and Figure 2.4 which give the parity progression ratios for different surveys.

Table 2.6 Parity progression ratios

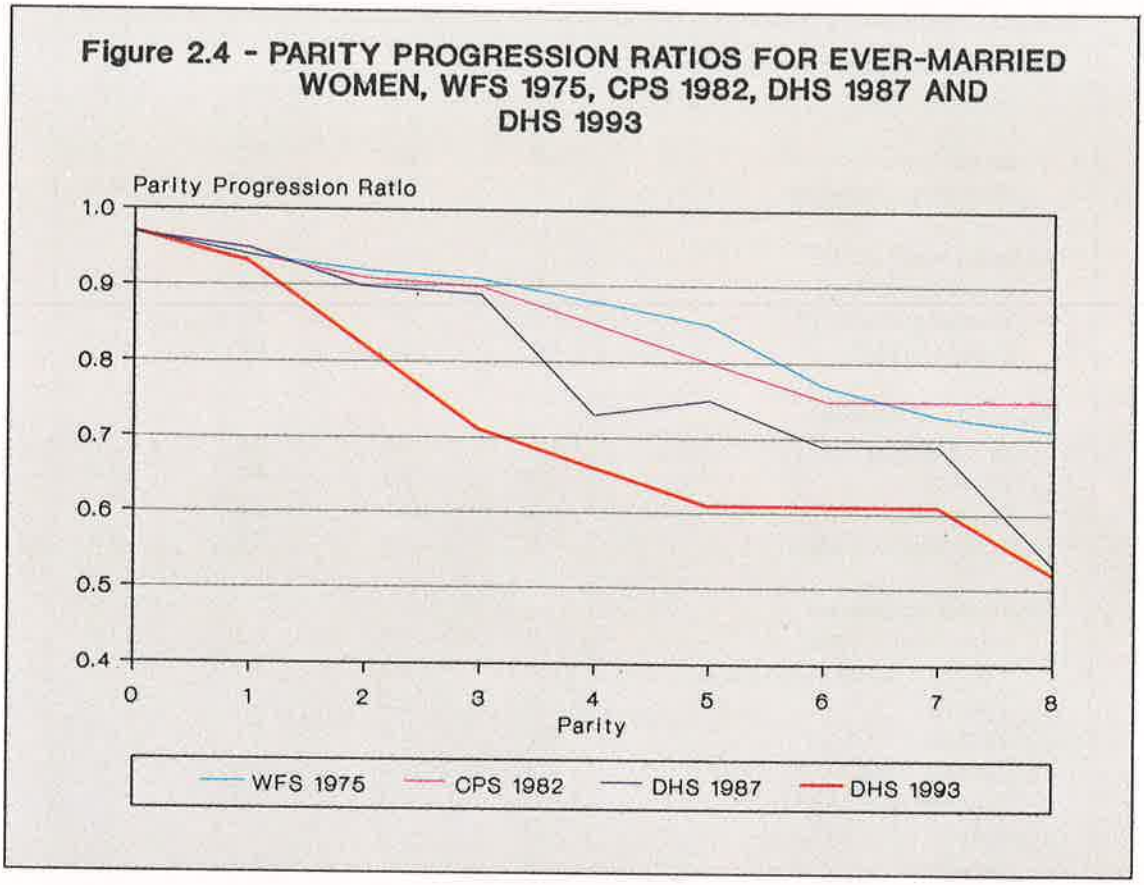
Comparison of parity progression ratios for ever-married women for selected surveys

Parity	DHS 1993	DHS 1987	CPS 1982	WFS 1975
0	0.97	0.97	0.97	0.97
1	0.93	0.95	0.94	0.94
2	0.82	0.90	0.91	0.92
3	0.71	0.89	0.90	0.91
4	0.66	0.73	0.85	0.88
5	0.61	0.75	0.80	0.85
6	0.61	0.69	0.75	0.77
7	0.61	0.69	0.75	0.73
8	0.52	0.53	0.75	0.71

These ratios indicate the proportion of women at a given parity who subsequently will go on to a higher parity. For example, the parity progression ratio at parity 1 is .95, means that 95 percent of parity 1 women will subsequently go on to have two or more children. Generally it is expected that in non-contracepting populations parity progression ratios decline gradually while in contracepting populations there is a sharper and more abrupt declines.

It is seen from Figure 2.4 that in all the four surveys approximately the same proportions of women progressed from parity 0 to 1 and 1 to 2. Thereafter, DHS93 ratios show sharper declines and a larger separation in comparison with DHS87 is seen for the parity 3 to 4. Ultimately the ratios become approximately the same at parity 8.

Figure 2.4 - PARITY PROGRESSION RATIOS FOR EVER-MARRIED WOMEN, WFS 1975, CPS 1982, DHS 1987 AND DHS 1993



Differentials in cumulative fertility by selected socio- economic characteristics of respondent and their husbands are shown in Table 2.7.

Table 2.7 Mean number of children ever born

Mean number of children ever born by background characteristics of currently married women and their husbands, according to age of woman

Background characteristic	Age of woman			Total
	15-24	25-34	35-49	
Woman's education				
No education	1.4	2.8	4.3	3.4
Primary	1.4	2.7	4.1	3.3
Secondary	1.0	2.1	3.3	2.4
More than secondary	.8	1.6	2.6	2.0
Woman's work status				
Currently working	.9	2.0	3.1	2.6
Worked previously*	1.3	2.0	3.1	2.5
Never worked**	1.1	2.2	3.6	2.7
Husband's education				
No education	1.3	2.6	4.1	3.2
Primary	1.3	2.7	4.1	3.2
Secondary	1.0	2.1	3.5	2.6
More than secondary	.8	1.6	2.6	2.0
Husband's occupation				
Adm./ Mgri./ Profe.	.8	1.5	2.3	1.9
Teachers: school/ University	.0	1.2	2.3	1.9
Clerical	.6	1.6	2.5	1.9
Farming	1.2	2.4	4.1	3.1
Fishing/ Hunting	1.3	2.5	4.1	2.6
Estate worker	1.0	2.5	3.6	2.9
Sales	.9	2.0	3.4	2.5
Service	.8	2.1	3.2	2.4
Skilled/ Unskilled labourer	1.1	2.2	3.4	2.6
No occupation	.9	1.3	4.1	3.4
Not classified	.9	1.9	3.1	2.4
Total	1.0	2.1	3.4	2.6

* "Worked previously" means that the woman is not currently working and she worked before marriage and/ or after marriage.

** "Never worked" means that the woman is not currently working and she did not work either before marriage or after marriage.

The largest differentials are observed for the woman's education. Women with more than secondary education level have 1.4 children less than the women with no education. These differentials widens as the age group of women advances. Hardly any differentials exist by woman's work experience. Husband's education seems to be inversely related to the cumulative fertility but less pronounced than the woman's education. Women whose husbands are in administrative, managerial or professional grades have a relatively small number of children ever born.

Table 2.8 shows the mean number of children ever born to ever-married women by age at first marriage and duration since first marriage.

Table 2.8 Children ever born by marriage duration and age at marriage

Mean number of children ever born (CEB) to ever-married women, by age at first marriage and duration since first marriage, DHS 1993 and CEB for all ages and durations, DHS 1987 and DHS 1993

Duration since first marriage (years)	Age at first marriage						Total all ages	
	<15	15-17	18-19	20-21	22-24	25-27	DHS93	DHS87
0-4	.5	.8	.8	.7	.8	.7	.8	1.0
5-9	2.1	2.0	2.0	1.8	1.9	1.8	1.9	2.3
10-14	2.9	3.0	3.0	2.6	2.5	2.4	2.7	3.1
15-19	3.5	3.5	3.4	3.3	2.9	2.8	3.2	3.8
20-24	3.8	3.9	3.8	3.7	3.3	3.1	3.6	4.6
25-29	5.4	4.3	4.3	4.1	3.7	-	4.3	5.4
30+	6.4	5.5	5.2	5.4	-	-	5.7	6.8
All marriage durations DHS 93	4.7	3.2	2.9	2.7	2.3	2.0	2.7	
All marriage durations DHS 87	5.6	3.8	3.2	2.9	2.6	2.1		3.1

Irrespective of the marriage duration, age at first marriage has substantial effect on the cumulative fertility. For example, CEB declines monotonically from 4.7 for women married before age 15 to 2.0 for those who married between 25-27. The decrease of completed fertility as age at marriage increases is expected as late age at marriage results less years of exposure to conception and childbearing. However, the comparison with the corresponding values from DHS87 reveals that the level of CEB is smaller for DHS93 for all categories of age at first marriage. It is also noted that the effect of age at first marriage on completed fertility is far more pronounced at higher marriage durations. For example, hardly any differentials exist in completed fertility by

age at first marriage for marriage durations 0-4 and 5-9; but there is a difference of 1.7 children between the lowest and highest age at first marriage levels for the duration 25-29 years. The same pattern was observed in DHS87 too.

2.5 Birth Intervals

The length of the interval between live births has implications on both fertility and mortality. It is hypothesized that women who have births in rapid successions complete their childbearing years with more children than those who space births farther apart. Further, birth interval analysis helps to understand the patterns of choosing additional children by individual couples as each child is born, as well as the factors that influence those patterns and distribution. On the other hand, birth interval greatly influences child mortality. When a child has a short preceding birth interval, then his chance of dying at early stages is much greater than a child with a longer preceding interval. Birth intervals less than two years long are generally considered as too short and hence treated as having the highest risk of mortality; intervals of three or more years usually carry the least risk.

Table 2.9 shows the percent distribution of births in the five years prior to the survey according to the length of the interval since the previous birth.

The median length of birth interval is 37 months. It increases substantially with the age of the mother, from 18 months in the 15-19 age group to 54 months in the 40+ age group. The median birth interval is shorter than the average for younger women, for women living in estates, and for women who are either had no education or had only primary education. Further, the median birth intervals are also shorter than the average for highest order births, for female births and for births whose prior sibling had died before the time of the survey. It is to be noted that all the median birth intervals are above two years except for births to women in the age group 15-19.

The percentage figures at the bottom of Table 2.9 indicate that nearly 35 percent of the births occured four years or longer after the previous birth, 44 percent had a two to four year interval and only nearly one in five had an interval of less than two years. These facts together with an overall median birth interval of 37 months clearly show that the women in Sri Lanka favour relatively long birth intervals. There is very little variation in each birth interval category according to the sex of prior birth. It is also revealed that more than 30 percent of births occured with previous birth interval less than two years for younger women and women in estates.

Table 2.9 Birth intervals

Percent distribution of births in the five years preceding the survey by number of months since previous birth according to selected demographic and background characteristics

Background characteristic	Number of months since previous birth					Total	Median months since previous birth	Number of births
	7-17	18-23	24-35	36-47	48+			
Age of mother								
15-19	44.2	46.6	9.2	0.0	0.0	100	18.0	9
20-29	14.8	17.0	30.7	16.1	21.5	100	30.0	894
30-39	6.5	8.9	25.2	18.5	40.9	100	42.0	1176
40+	3.1	5.1	16.9	15.5	59.4	100	54.0	209
Birth order								
2-3	10.3	12.4	25.1	17.3	34.8	100	37.0	1666
4-6	7.9	10.1	29.9	17.1	35.0	100	37.0	562
7+	4.9	11.4	34.0	15.2	34.5	100	33.0	61
Sex of prior birth								
Male	9.4	11.7	25.6	18.7	34.6	100	38.0	1172
Female	9.8	11.9	27.5	15.7	35.1	100	36.0	1117
Survival of prior birth								
Living	9.4	11.9	26.6	17.1	35.0	100	37.0	2245
Dead	18.0	8.9	23.3	22.6	27.2	100	35.0	44
Sector								
Colombo metro	12.5	12.9	22.3	15.7	36.6	100	37.0	226
Other urban	11.5	8.3	28.1	19.4	32.6	100	37.0	170
Rural	9.0	11.3	26.4	17.7	35.6	100	38.0	1743
Estate	10.2	20.2	32.1	12.0	25.5	100	31.0	150
Zone								
Zone 1	12.5	12.9	22.3	15.7	36.6	100	37.0	226
Zone 2	9.9	9.4	19.7	18.8	42.3	100	41.0	314
Zone 3	7.7	12.5	25.9	19.2	34.7	100	38.0	337
Zone 4	9.9	9.9	29.2	16.4	34.7	100	36.0	457
Zone 5	9.8	14.6	28.4	13.2	33.9	100	33.0	494
Zone 6	9.9	11.8	26.1	18.2	34.0	100	37.0	188
Zone 7	8.0	11.4	30.8	22.2	27.7	100	35.0	273
Education of mother								
No education	10.7	14.5	30.0	13.0	31.8	100	34.0	198
Primary	10.1	12.7	31.9	17.6	27.8	100	33.0	590
Secondary	9.5	12.3	26.3	16.7	35.3	100	37.0	893
More than secondary	8.9	9.5	20.6	19.0	42.1	100	42.0	608
Total	9.6	11.8	26.5	17.2	34.8	100	37.0	2289

Note: First order births are excluded.

2.6 Age at First Birth

The age at which childbearing begins has important demographic and health consequences. A rise in the age at first birth is usually a result of increasing age at marriage. In many countries postponing the first birth, combined with spacing the second, has contributed greatly to reducing fertility. On the other hand, bearing children at an early age entails significant risks to the health of both the mother and the child.

Table 2.10 presents the percent distribution of Sri Lankan women by age at first birth, according to their current age. The women here relate to those who recorded in the household questionnaire. The household questionnaire did not contain information on births to women who are never married. These never married women are assumed to have had no births. Median age at first birth which is shown in the last column, has censored information for some age categories since less than 50 percent of the women in that age category have their first birth at an older age.

Table 2.10 Age at first birth

Percent distribution of all women* by age at first birth (including the category no birth) according to current age

Current age	No births		Age at first birth <15	15-17	18-19	20-21	22-24	25-27	28-30	31+	Total	Number of women	Median age at first birth	
15-19	97.1	(96.4)	0.0	1.9	1.1	NA	NA	NA	NA	NA	100	2072	**	
20-24	71.4	(67.0)	0.2	5.4	8.1	10.0	4.8	NA	NA	NA	100	2024	**	
25-29	42.6	(37.7)	0.3	6.2	10.1	11.7	16.7	11.1	1.3	NA	100	1752	26.3	(24.7)
30-34	24.6	(19.2)	0.4	5.8	11.6	14.0	16.8	13.4	10.0	3.4	100	1653	25.3	(24.1)
35-39	15.4	(14.2)	0.3	6.0	10.6	14.6	21.3	12.9	9.4	9.4	100	1438	24.6	(24.9)
40-44	13.2	(9.4)	1.2	6.0	11.7	12.6	19.8	15.2	8.4	11.8	100	1385	24.8	(23.1)
45-49	7.9	(6.9)	2.7	12.8	10.8	13.5	18.9	11.4	9.5	12.5	100	1119	23.5	(21.8)
All ages	44.6	(43.9)	0.6 (1.5)	5.8 (6.7)	8.7 (9.6)	10.3 (11.0)	12.8 (12.5)	8.2 (7.8)	4.8 (4.2)	4.3 (2.9)	100	11442 (9585)	**	

* Taken from household questionnaire.
** Omitted due to censoring
Figures within parantheses are from DHS 87
NA - Not applicable

In general, the median age at first birth for younger women is higher than older cohorts. For example, it is as high as 26.3 years for 25-29 age group as compared to 23.5 years for the oldest cohort. Hence there is evidence that age at first birth has been increasing among Sri Lankan women. Comparison with DHS87 data reveals that the median age at first birth has increased for all age groups except for 35-39. Another important feature in Table 2.10 is the relatively large

percentage of women with no births. For example, nearly 43 percent of women in the age group 25-29 and 25 percent of women aged 30-34 have had no births. The comparison with DHS87 reveals that the corresponding figures have increased from 37.7 and 19.2 respectively.

The prevalence of early childbearing is often associated with high infant and maternal mortality. Hence the percentage of women whose first birth occurs before they reach the age of 18 is an important indicator of health for both mother and child. Table 2.10 indicates that at the overall level only 6.4 percent of women have had their first birth before age 18. This shows a drop of 1.8 percentage points from DHS87 figures. Further, this percentage decreases with each five year age group from 45-49 (15.5 percent) to 20-24 (5.6 percent) except for very slight increase in 25-29 age cohort. In fact, the same pattern prevailed in DHS87 too with the percentages 22.5 and 5.3 respectively. Therefore, the percent of women who are at high risk because of early age at first birth has declined in recent years.

Differentials in the age at first birth are shown in Table 2.11.

Table 2.11 Age at first birth by background characteristics

Median age at first birth among all women* aged 25-49 by current age and background characteristics

Background characteristic	Current age 25-29	30-34	35-39	40-44	45-49	All ages 25-49	
Sector							
Colombo metro	27.6	26.9	25.9	26.2	25.4	26.6	(25.3)
Other urban	25.9	28.2	25.6	26.0	23.4	26.1	(26.5)
Rural	26.3	24.8	24.4	24.6	23.4	24.7	(23.7)
Estate	22.1	23.7	23.3	23.8	23.5	23.4	(22.5)
Zone							
Zone 1	27.6	26.9	25.9	26.2	25.4	26.6	(25.3)
Zone 2	26.6	25.8	27.0	25.7	24.6	26.1	(25.2)
Zone 3	**	28.2	25.4	27.0	25.7	27.0	(26.4)
Zone 4	27.4	24.9	24.2	24.8	23.1	24.7	(23.5)
Zone 5	25.2	24.7	24.6	24.0	22.8	24.3	(23.5)
Zone 6	22.6	22.7	21.6	22.8	21.6	22.2	(22.2)
Zone 7	23.7	22.5	21.7	21.7	20.7	22.2	(21.4)
Total	26.3	25.3	24.6	24.8	23.5	25.2	(24.0)

* Taken from household questionnaire.

** Median could not be calculated because more than 50 percent of women in this group have not had a first birth.

Figures within parantheses are from DHS87

The median age at first birth for all women 25-49 is 25.2 years. This shows an increase of 1.2 years during 1987-1993 period. Women in Colombo metro area have the highest median age at first birth of 26.6 years as compared to the lowest value of 23.4 years for estate women. In fact, the estate women record the lowest median age at first birth for all age groups except for 45-49. Comparison with the corresponding DHS87 figures reveals that the median age at first birth has increased for all sectors except for women in the other urban areas. By zone, the women in the south western coastal low lands, zone 3, have the highest median age at first birth and zone 6 and zone 7 covering the dry zone areas record the lowest value. Compared to DHS87 the median age at first birth has increased in all zones except zone 6 where it remains stable at the level of 22.2 years.

CHAPTER 3

FAMILY PLANNING

S. Ukwatta

Information on contraceptive knowledge and use by various methods is of particular importance to policy makers, programme managers and researchers for formulating future programme strategies. An assessment of the extent of knowledge and use of contraception, is therefore a major objective of this survey. The Demographic and Health Survey 1993 investigated the knowledge and use of family planning methods among all ever married women of age 15-49. This chapter describes women's knowledge and use of various family planning methods, their sources, fertile period, age at sterilization, living children at the time of first use, method discontinuation, attitudes towards pregnancy, future use and family planning messages.

3.1 Contraceptive Knowledge

Women's knowledge of various methods was obtained in two ways. First, the respondent was asked to report all the methods she knew without any prompting. The question used to elicit a spontaneous reply was : " I would like to talk about a different topic. There are various ways that a couple can delay or avoid pregnancy. Please tell me all the methods that you have heard of". Secondly, for every method not mentioned spontaneously, the interviewer read out the names and a short description of the methods. Descriptions were included in the questionnaire for 10 methods (pill, IUD, injection, vaginal methods-diaphram, foam, jelly- , condom, female sterilization, male sterilization, norplant, periodic abstinence and withdrawal). In addition, other methods mentioned by the respondent were also recorded. To probe the knowledge of each method not mentioned by the respondent, she was asked " Have you ever heard of .....(name of the method)?". If a woman replied yes/spontaneously or yes/probed for any method, she was treated as having a contraceptive knowledge for that method.

3.1.1 Levels and Trends

Unprompted and prompted knowledge by specific method for ever married and currently married women is shown in Table 3.1. Almost all ever married (99.1 percent) and currently married (99.3 percent) women know at least one method of contraception. Virtually, almost all of these ever married women and all currently married women who reported such knowledge know a modern

method. Seventy one percent of ever married and 72.6 percent of currently married women know a traditional method. More than 90 percent of the women both ever married and currently married reported the knowledge of female sterilization, pill and injection and female sterilization being the best known method. Except for vaginal methods and norplant, modern methods are better known than traditional methods.

Unprompted knowledge is higher for modern methods pill, IUD, injection and female sterilization for both ever married and currently married women than prompted knowledge. Prompted knowledge is higher for all traditional methods except for other methods than unprompted knowledge.

Table 3.1 Knowledge of contraceptive methods

Percentage of ever-married and currently married women aged 15-49 knowing any method, any modern method and any traditional method, DHS 1987 and DHS 1993.

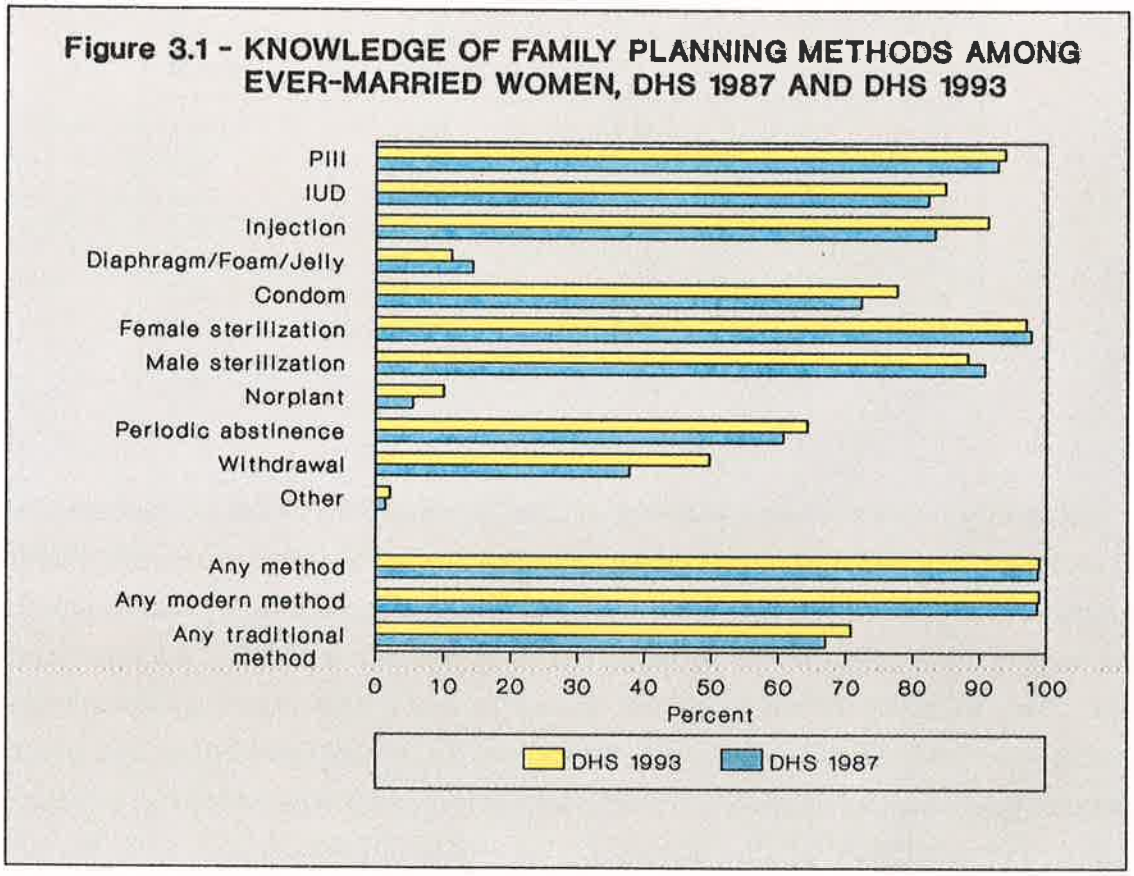
Contraceptive method	Ever-married women				Currently married women			
	Know method		Unprompted knowledge	Prompted knowledge	Know method		Unprompted knowledge	Prompted knowledge
	DHS 87	DHS 93			DHS 87	DHS 93		
Any method	98.8	99.1	90.7	89.3	99.1	99.3	91.7	89.6
Any modern method	98.7	99.0	89.6	85.9	99.1	99.3	90.6	86.2
Pill	92.7	93.8	74.9	18.9	93.4	94.5	76.1	18.3
IUD	82.4	84.9	47.8	37.1	83.4	85.7	48.7	37.0
Injection	83.3	91.3	52.3	38.9	84.3	92.0	53.4	38.6
Vaginal methods	14.3	11.2	2.9	8.3	14.6	11.6	3.0	8.6
Condom	72.2	77.6	35.6	42.0	73.3	78.7	36.5	42.2
Female sterilization	97.7	97.0	52.4	44.6	98.1	97.3	52.7	44.6
Male sterilization	90.8	88.2	30.5	57.7	91.5	88.6	30.9	57.7
Norplant	5.5	10.0	2.9	7.1	5.8	10.5	3.0	7.5
Any traditional method	67.0	71.0	25.5	57.5	68.3	72.6	26.4	58.8
Periodic abstinence	60.7	64.3	22.7	41.6	61.9	65.9	23.4	42.5
Withdrawal	37.8	49.7	8.4	41.3	38.8	51.3	8.8	42.5
Other	1.4	2.1	1.2	0.9	1.4	2.1	1.2	0.9
Number of women	5864	6983	6983	6983	5442	6434	6434	6434

Note: Vaginal methods are diaphragm, foam and jelly.

For ever married women during the period 1987-1993, the knowledge of any family planning method and any modern method have both increased slightly and remain at a very high

level of 99 percent. Knowledge of traditional methods, on the other hand has increased by 4.0 percentage points during the period. This is clearly seen in Figure 3.1. Among the modern methods, the largest increase in knowledge levels was recorded for injection (8.0 percentage points) followed by condom (5.4 percentage points). However, the knowledge levels have decreased by 3.1 percentage points for vaginal methods, 0.7 percentage points for female sterilization and 2.6 percentage points for male sterilization. Among the traditional methods, the knowledge of withdrawal has significantly increased from 37.8 percent in 1987 to 49.7 percent in 1993. Knowledge of periodic abstinence and other methods also slightly increased. In fact, withdrawal is the method which recorded the highest increase of 11.9 percentage points in knowledge levels among all family planning methods. The same pattern of knowledge can be seen among currently married women also.

Figure 3.1 - KNOWLEDGE OF FAMILY PLANNING METHODS AMONG EVER-MARRIED WOMEN, DHS 1987 AND DHS 1993



3.1.2 Differentials in Knowledge

Table 3.2 gives the percentages of currently married women who know any method, any modern method and any traditional method by age group. Knowledge of all modern methods is uniformly high (more than 98 percent) among women in all age groups, except the youngest, where it is marginally lower (96.3 percent). On the other hand, knowledge of traditional methods is significantly low among the younger age group 15-19 having only 47.1 percent.

Table 3.2 Knowledge of contraceptive methods by age

Percentage of currently married women aged 15-49 knowing any method, any modern method and any traditional method by current age of women.

Current age	Any method	Any modern method	Any traditional method
15-19	96.3	96.3	47.1
20-24	98.9	98.9	66.2
25-29	99.7	99.7	69.4
30-34	99.1	99.1	76.3
35-39	99.7	99.7	76.9
40-44	99.8	99.8	75.6
45-49	98.5	98.4	70.7
Total	99.3	99.3	72.6

Currently married women knowing at least one modern method by number of living children, sector, zone and education is shown in Table 3.3. Contraceptive knowledge is uniformly high (over 95 percent) in all sectors, zones and educational categories. Estate women reported the lowest level of knowledge for both surveys 1987 (97.2 percent) and 1993 (98.5 percent) among sectors. There are no significant differences among the zones. As expected, the knowledge level of women with no education is low for both surveys and the level of knowledge varies in a narrow range from 96.1 percent for no education to 99.8 percent for women with more than secondary level education. In general, there is a clear relationship between the knowledge and parity. Women with no children have marginally lower knowledge generally in all categories.

Table 3.3 Knowledge of contraceptives by background characteristics

Percentage of currently married women aged 15-49 knowing at least one modern method by number of living children and selected background characteristics.

Background characteristic	Number of living children							
	0	1	2	3	4	5	6+	Total
Sector								
Colombo metro	97.9	98.7	99.6	99.4	100.0	100.0	100.0	99.2 (99.5)
Other urban	96.3	98.6	100.0	100.0	100.0	100.0	100.0	99.3 (99.8)
Rural	96.5	99.2	99.8	99.7	100.0	99.5	98.7	99.3 (99.1)
Estate	92.2	99.5	98.2	100.0	98.8	99.0	99.0	98.5 (97.2)
Zone								
Zone 1	97.9	98.7	99.6	99.4	100.0	100.0	100.0	99.2 (99.5)
Zone 2	97.3	98.6	100.0	99.2	100.0	100.0	100.0	99.3 (99.4)
Zone 3	98.6	98.7	100.0	100.0	100.0	100.0	100.0	99.6 (97.8)
Zone 4	97.4	100.0	99.5	100.0	100.0	100.0	100.0	99.6 (99.0)
Zone 5	92.8	99.3	99.6	99.5	99.7	100.0	97.1	98.8 (99.2)
Zone 6	100.0	99.2	99.4	100.0	100.0	100.0	98.1	99.6 (99.7)
Zone 7	93.9	98.7	99.8	100.0	99.9	96.1	98.3	98.7 (99.1)
Education								
No education	77.2	92.8	97.2	100.0	99.8	97.9	95.4	96.1 (97.2)
Primary	91.6	97.0	99.4	99.8	99.8	99.9	99.5	98.9 (99.0)
Secondary	98.9	99.7	100.0	99.4	100.0	99.3	100.0	99.7 (99.2)
More than secondary	98.5	100.0	100.0	100.0	100.0	100.0	100.0	99.8 (99.8)
Total	96.5 (96.2)	99.1 (98.8)	99.7 (99.5)	99.7 (99.6)	99.9 (99.7)	99.5 (99.0)	98.9 (99.2)	99.3 (99.1) (99.1)

Note: Figures within parantheses are from DHS87 .

3.1.3 Source Knowledge

Women who reported knowing a method were asked "where would you go to obtain (METHOD) if you wanted to use it?". Women who knew periodic abstinence were asked "Where would you go to obtain advice?". Some who claim to know a family planning method did not know where they can obtain it. However, the gap between knowledge of contraceptive methods and knowledge of their sources among ever married women is very small. As shown in Table 3.4, over 90 percent know a source for pill, injection and sterilizations and over 80 percent for IUD and condom. It is not surprising that 33.4 percent did not know a source for vaginal methods and 28.8 percent for norplant, as they are not well known methods to most of the women. Majority of the women who know the sources for pill, IUD, injections, sterilizations and norplant know that they

Table 3.4 Source knowledge of contraceptive methods

Percent distribution of ever-married women aged 15-49 knowing a method by supply source named (if any).

Supply source	Contraceptive Methods								
	Pill	IUD	Inject-ion	Vaginal methods	Condom	Female sterili.	Male sterili.	Periodic abstinence	Norplant
Govt. hosp. / MCH center	31.4	77.4	75.4	31.1	9.8	94.2	92.0	5.9	60.7
Pvt. doctor/ Pvt. nursing home	2.5	3.0	10.5	3.2	0.7	1.5	1.3	2.5	3.2
Non-govt. clinic	0.5	0.9	0.9	0.4	0.4	1.2	1.3	0.4	1.8
Mobile clinic	4.4	3.0	3.7	1.0	2.5	0.1	0.1	1.7	1.1
Family health worker/ Nurse	37.1	4.1	2.6	13.3	17.1	0.2	0.3	33.4	1.8
Other field workers	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Ayurvedic doctor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Friend/ Relative	0.1	0.0	0.0	0.7	0.1	0.0	0.0	27.6	0.9
Pharmacy/ Shop	16.7	1.0	0.5	16.1	56.1	0.0	0.0	0.2	0.0
Other	0.0	0.1	0.1	0.5	0.2	0.1	0.1	5.8	1.4
Nowhere	0.1	0.1	0.2	0.3	0.0	0.3	0.3	6.9	0.2
Sub Total	92.9	89.6	93.9	66.6	86.9	97.6	95.4	85.2	71.1
DK/ Not stated	7.0	10.4	6.0	33.4	12.9	2.4	4.6	14.7	28.8
Total	100	100	100	100	100	100	100	100	100
Number of women	6553	5930	6373	781	5420	6776	6159	4490	701

Note: Vaginal methods are diaphragm, foam and jelly.

can obtain the method from government hospitals/ MCH centers and family health workers/ nurses. One third of the women who know vaginal methods did not know where they can obtain the methods. About 56 percent of the women who know of condom mentioned the pharmacy/shop as the source indicating an active marketing programme. About 16 percent of the women who know of pill and vaginal methods also mentioned the source as pharmacy/shop. About 60 percent of the women who knew periodic abstinence reported that they can obtain advice from family health workers/ nurses and friends/ relatives.

3.1.4 Acceptability of Methods

Women were also asked about the main problems, if any, in getting or using the methods known to them. Main problems for specific methods are given in Table 3.5. The question was difficult to respond for non users. About 77 percent did not respond to problems of norplant and a much smaller 22 percent to periodic abstinence. Largest proportions of "no problem" is reported for traditional methods (63.3 percent for periodic abstinence and 52.4 percent for withdrawal) and approximately 10 percent stated these methods were not effective. Health problems were dominant

for modern methods pill (30.7 percent), IUD (20.5 percent), injections (27.7 percent) and female sterilization (15.9 percent). The other main problem is husband's disapproval for condom (7.6 percent). Access or availability, cost, inconvenience in use are not seen as problems .

Table 3.5 Main problems in getting or using methods

Percent distribution of ever-married women aged 15-49 who have ever heard of a method by the main problem perceived in getting or using particular methods, if any, according to method.

Main problem	Contraceptive Methods									
	Pill	IUD	Inject-ion	Vaginal methods	Condom	Female sterili.	Male sterili.	Periodic abstinence	With-drawal	Norplant
No problem	29.8	23.8	27.0	16.3	32.2	45.4	32.7	63.3	52.4	13.6
Husband disapproves	0.8	1.8	1.0	1.5	7.6	1.5	4.0	0.9	5.6	0.7
Health	30.7	20.5	27.7	7.9	1.9	15.9	9.0	0.2	0.2	6.3
Access/ Availability	0.2	0.2	0.9	1.2	0.2	0.3	0.1	0.0	0.0	1.3
Costs too much	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Not effective	1.9	3.4	1.8	1.7	3.7	1.3	1.1	9.9	10.8	0.9
Inconvenient to use	2.2	2.4	0.5	2.6	2.3	0.1	0.0	3.3	2.4	0.4
Other	0.3	0.5	0.5	0.1	0.4	0.9	0.7	0.4	0.4	0.0
DK/ Not stated	33.9	47.3	40.2	68.6	51.8	34.6	52.3	22.0	28.2	76.8
Total	100	100	100	100	100	100	100	100	100	100
Number of women	6553	5930	6373	781	5420	6776	6159	4490	3474	701

Note: Vaginal methods are diaphragm, foam and jelly.

3.2 Contraceptive Use

3.2.1 Ever Use of Contraceptives

For each method known to the respondent, information was collected on "whether she had ever used that method?". Table 3.6 shows the changes in ever use of contraceptives by major types of methods for ever married women in the survey periods 1975, 1982, 1987 and 1993 and Figure 3.2 depicts the changes clearly.

Percentage of ever use of any family planning method is 76.2 percent and it shows an increase of 6.1 percent during the period 1987-1993. Ever use of any modern method is 56.9 percent with an increase of about 12.9 percent during the same period. The highest rate of increase is recorded for ever use of any modern method for the period 1975-1993. Ever use of any traditional method remains at 44 percent in 1993 as well as in 1987. The rate has decreased from 46.6 percent

in 1982 to 43.5 in 1993. This may be due to the reason that prolonged abstinence was not included in 1987 and in 1993 surveys as a contraceptive method for ever use, although it was included in 1982 survey.

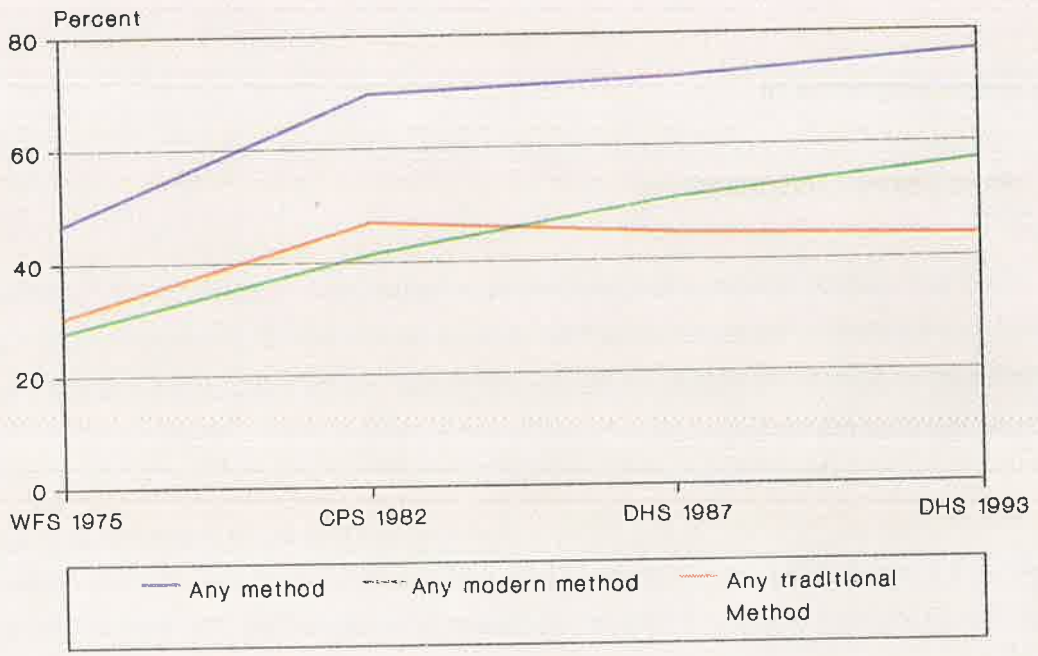
Table 3.6 Trends in ever use of contraceptives

Percentage of ever- married women who have ever used a contraceptive method by major methods, WFS 1975 , CPS 1982, DHS 1987 and DHS 1993.

Type of method	WFS 1975	CPS 1982	DHS 1987	DHS 1993
Any method	46.5	69.2	71.8	76.2
Any modern method	27.4	41.0	50.4	56.9
Any traditional method	30.0	46.6	44.3	43.5

Note: Data from the northern and eastern provinces have been excluded from the WFS and CPS in order to make these two surveys comparable with the geographic areas covered by DHS 87 and DHS 93.

Figure 3.2 - PERCENTAGE OF EVER-MARRIED WOMEN WHO HAVE EVER USED A CONTRACEPTIVE BY MAJOR METHOD WFS 1975, CPS 1982, DHS 1987 AND DHS 1993



As shown in Table 3.7, among currently married women 78.3 percent have ever used any method of family planning, 58.5 percent have used any modern method and 44.9 percent have ever used any traditional method. During the period 1987-1993 there is an increase in the use of any method (about 6 percent) and any modern method (about 12 percent), but it remains unchanged at the level of 45 percent for traditional methods. For both ever married and currently married women, the most commonly used modern method is female sterilization (23.5 percent and 23.6 percent respectively) followed by pill (20.3 percent and 21.2 percent respectively). Same pattern is observed in 1987 survey as well. The rate of use have increased for pill, injection and condom, while the rates have decreased for IUD, vaginal methods, female sterilization and male sterilization, for both ever married and currently married women. The rate of norplant has remained un-changed. Among the ever users of traditional methods, a little more than one third of both ever married and currently married women have used periodic abstinence. It is the method which recorded highest rate followed by withdrawal. The rate has decreased for periodic abstinence and the rate has increased for withdrawal.

Table 3.7 Ever use of contraceptives among ever-married and currently married women

Percentage of ever-married and currently married women who have ever used a method by specific method, DHS 1987 and DHS 1993.

	Ever use			
	Ever-married women		Currently married women	
Contraceptive method	DHS 1993	DHS 1987	DHS 1993	DHS 1987
Any method	76.2	71.8	78.3	73.9
Any modern method	56.9	50.4	58.5	52.2
Pill	20.3	15.2	21.2	15.8
IUD	7.6	8.7	7.9	8.9
Injection	15.5	5.9	16.4	6.3
Vaginal methods	0.1	0.2	0.1	0.2
Condom	10.3	9.4	10.7	9.9
Female sterilization	23.5	24.2	23.6	24.9
Male sterilization	3.8	5.4	4.0	5.7
Norplant	0.1	0.1	0.1	0.1
Any traditional method	43.5	44.3	44.9	45.4
Periodic abstinence	34.9	38.6	35.8	39.6
Withdrawal	22.1	17.2	23.0	17.8
Other	1.4	0.8	1.4	0.9

Note: Vaginal methods are diaphragm, foam and jelly.

Table 3.8 Ever use of contraceptives by age

Percentage of ever-married and currently married women who have ever used specific methods by current age

Contraceptive method	Age of woman							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
	Ever-married women							
Any method	40.4	67.0	75.0	80.6	83.1	77.4	73.6	76.2
Any modern method	28.8	50.6	57.0	61.8	63.2	56.4	52.1	56.9
Pill	14.2	25.9	26.9	23.8	20.4	15.5	11.0	20.3
IUD	3.7	6.4	7.5	7.1	8.6	8.0	8.4	7.6
Injection	10.1	26.7	25.1	21.0	13.9	6.8	3.2	15.5
Vaginal methods	0.6	0.0	0.0	0.1	0.3	0.0	0.1	0.1
Condom	4.5	7.4	10.4	14.6	12.2	9.1	6.4	10.3
Female sterilization	0.0	3.6	12.4	20.9	32.6	33.9	32.8	23.5
Male sterilization	0.0	0.5	1.2	4.3	5.3	5.0	5.9	3.8
Norplant	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.1
Any traditional method	22.8	36.3	39.3	47.7	47.1	46.8	42.4	43.5
Periodic abstinence	14.0	25.5	32.4	37.9	39.0	38.2	34.1	34.9
Withdrawal	14.6	22.6	19.9	26.3	23.5	22.4	18.0	22.1
Other	0.0	0.8	0.8	0.9	1.3	2.1	2.5	1.4
Number of women	146	751	1145	1352	1275	1255	1060	6983
	Currently married women							
Any method	41.8	68.4	76.0	81.8	85.6	80.8	77.2	78.3
Any modern method	29.8	51.7	57.8	62.9	64.7	59.3	54.1	58.5
Pill	14.7	26.5	27.1	24.4	21.5	16.3	11.6	21.2
IUD	3.8	6.4	7.5	7.3	8.7	8.7	8.8	7.9
Injection	10.5	27.2	25.6	21.5	14.6	7.4	3.7	16.4
Vaginal methods	0.6	0.0	0.0	0.1	0.3	0.0	0.2	0.1
Condom	4.7	7.7	10.6	14.9	12.6	9.7	6.8	10.7
Female sterilization	0.0	3.5	12.5	21.3	32.4	35.5	33.7	23.6
Male sterilization	0.0	0.5	1.2	4.4	5.7	5.4	6.2	4.0
Norplant	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.1
Any traditional method	23.5	37.3	40.0	48.2	49.3	48.8	44.9	44.9
Periodic abstinence	14.5	26.1	32.9	38.2	40.7	39.7	36.0	35.8
Withdrawal	15.1	23.1	20.1	26.9	24.9	23.7	18.7	23.0
Other	0.0	0.8	0.9	0.9	1.3	2.3	2.8	1.4
Number of women	141	722	1101	1287	1173	1115	894	6434

Note: Vaginal methods are diaphragm, foam and jelly.

Table 3.8 shows that more than three fourth of ever married and currently married women have used a contraceptive method at some time in the past. A little more than half used a modern method and a little less than half used a traditional method for both ever-married and currently married women. Female sterilization is the most widely used modern method and periodic abstinence is the most widely used traditional method. Among younger women pill, injection, periodic abstinence and withdrawal are the most used methods. Among older women female sterilization, periodic abstinence and withdrawal are the most used methods.

3.2.2 Current Use of Contraceptives

Contraceptive prevalence is defined as the proportion of married women aged 15-49 years who were using some method of family planning at the time of the survey. Table 3.9 shows the trends in current use of contraceptives of currently married women by specific method and it is clearly depicted in Figure 3.3. Sixty six percent of currently married women are using some method. Among these users a little more than 40 percent use a modern method while about one fifth use a traditional method.

Figure 3.3 - TRENDS IN CURRENT USE OF CONTRACEPTIVES AMONG CURRENTLY MARRIED WOMEN AGED 15-49 WFS 1975, CPS 1982, DHS 1987 AND DHS 1993

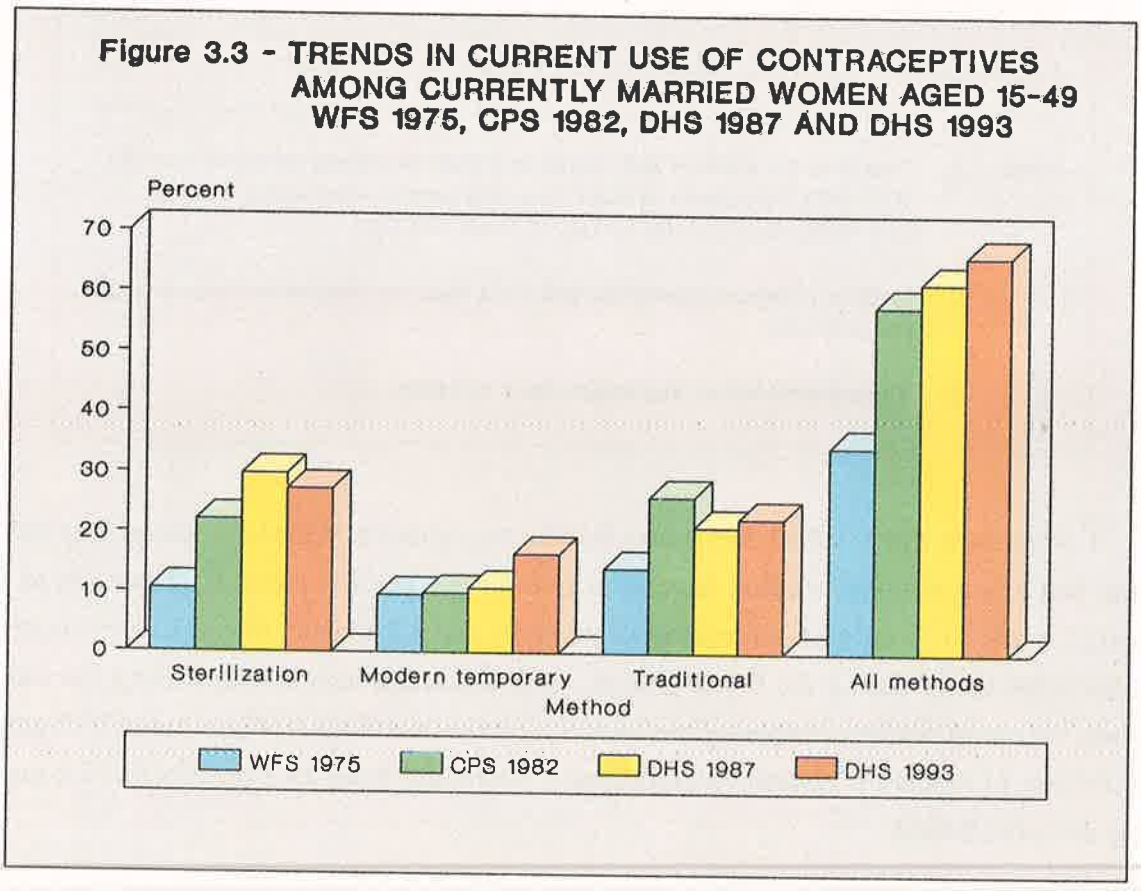


Table 3.9 Trends in current use of contraceptives

Trends in current contraceptive use by method among currently married women aged 15-49, WFS 1975, CPS 1982, DHS 1987 and DHS 1993.

Contraceptive method	Current use			
	WFS 1975	CPS 1982	DHS 1987	DHS 1993
Pill	1.7	2.7	4.1	5.5
IUD	5.2	2.9	2.1	3.0
Injection	0.4	1.0	2.7	4.6
Vaginal mehods	-	-	0.0	0.0
Condom	2.3	3.3	1.9	3.3
Sterilization	10.6	22.0	29.8	27.2
Norplant	-	-	0.0	0.1
Periodic abstinence	8.9	14.2	14.9	15.2
Withdrawal	1.6	5.1	3.4	5.0
Other	3.7	6.7	2.8	2.2
Any modern method	20.2	31.9	40.6	43.7
Modern temporary	9.6	9.9	10.8	16.5
Sterilization	10.6	22.0	29.8	27.2
Any traditional method	14.2	26.0	21.1	22.4
Any method	34.4	57.8	61.7	66.1

Note: 1. Data from the northern and eastern provinces have been excluded from the WFS and CPS in order to make these two surveys comparable with the geographic areas covered by DHS 87 and DHS 93.

2. Modern temporary methods are pill, IUD, Injection, vaginal methods, condom, and norplant.

3. Vaginal methods are diaphragm, foam and jelly.

Comparison with DHS 87 data shows that the prevalence rate for any method, any modern method and any traditional method have increased by 7.1 percent (from 61.7 percent to 66.1 percent), 7.6 percent (from 40.6 percent to 43.7 percent), and 6.2 percent (from 21.1 percent to 22.4 percent) respectively during the 6 year period. It is important to note that among the modern methods, the use of modern temporary methods have increased from 10.8 percent to 16.5 percent while the use of modern permanent methods have decreased from 29.8 percent to 27.2 percent during the same period.

During the period 1975-1993, the rate of current use of all modern methods has increased from 20.2 percent to 43.7 percent. Since 1975 the percentage of current use of modern temporary methods remained virtually constant at approximately 10 percent and there is a substantial increase since 1987. Use of modern permanent methods have increased during the period 1975-1987 and decreased after 1987. Use of traditional methods was 14.2 percent in 1975 and fluctuated around 20 percent during the period 1982-1993.

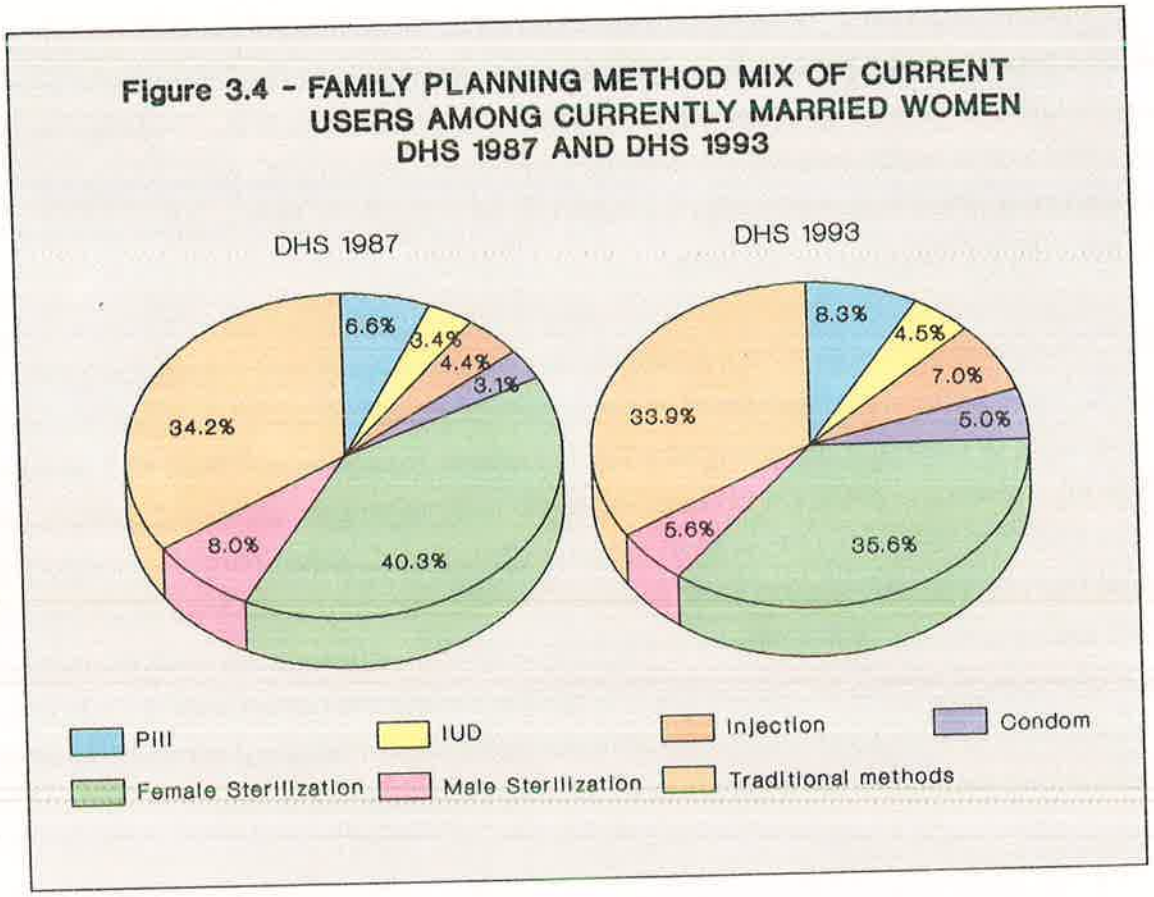
Changes in method mix among current users of currently married women since 1975 are shown in Table 3.10 and changes since 1987 are clearly depicted in Figure 3.4. It is apparent that the proportion of current users relying on modern methods have increased from 58.7 percent in 1975 to 66.1 percent in 1993. On the other hand, the users relying on traditional methods have dropped from 41.3 percent in 1975 to 33.9 percent in 1993. Use of modern temporary methods has dropped from 27.9 percent in 1975 to 17.1 percent in 1982, remained at the level of 17.5 percent in 1987 and increased to 24.8 percent in 1993. Rate of modern permanent methods has increased from 30.8 percent in 1975 to 48.3 percent in 1987 and decreased to the current level of 41.2 percent. It is important to note that there are fluctuations among the use of traditional methods. In WFS it has been shown that traditional methods have probably been underestimated.

Table 3.10 Method mix of current users

Changes in method mix among current users of currently married women WFS 1975, CPS 1982, DHS 1987 and DHS 1993.

Contraceptive method	WFS 1975	CPS 1982	DHS 1987	DHS 1993
Any method	100	100	100	100
Any modern method	58.7	55.2	65.8	66.1
Pill	4.9	4.7	6.6	8.3
IUD	15.1	5.0	3.4	4.5
Injection	1.2	1.7	4.4	7.0
Condom	6.7	5.7	3.1	5.0
Female Sterilization	{ 30.8	{ 38.0	40.3	35.6
Male Sterilization			8.0	5.6
Any traditional method	41.3	45.0	34.2	33.9
Periodic abstinence	25.9	24.6	24.1	22.9
Withdrawal	4.7	8.8	5.5	7.6
Other	10.8	11.6	4.5	3.3

Note: Data from the northern and eastern provinces have been excluded from the WFS and CPS in order to make these two surveys comparable with the geographic areas covered by DHS 87 and DHS 93.



3.2.3 Differentials in Current Use of Contraceptives

Presented in Table 3.11 is the levels and trends of current contraceptive use of currently married women by current age. An inverted U shape of prevalence by age is observed which is typical of patterns in most countries. In both surveys, women aged 35-39 reported the highest rate of prevalence (76.7 percent) with the rate of increase of 3.9 percent. As expected younger women in the age group 15-19 who are still in their early stages of family planning reported the lowest rate of 30.3 percent with the increase of 10.1 percentage points. Among the users, more women in the age groups 15-19 to 30-34 use a modern temporary method. Twelve percent of the women aged 20-24 use pill and another 12 percent of the same age group use injections. Condom users are more in the age group 30-34. Among the users of modern permanent methods in both surveys, more women in the age group 40-44 who are more likely to have completed their families and want to stop childbearing use female sterilization as a method. However, the percentage has decreased from 37.0 percent in 1987 to 35.5 percent in 1993. None in the lowest age group have used sterilization. Around 6 percent have used male sterilization in the age group 45-49. About 15 percent of the women aged 25-29 use periodic abstinence and it is the method preferred by the

Table 3.11 Current use of contraceptives by age

Percent of currently married women aged 15-49 according to contraceptive method currently using by age, DHS1987 and DHS1993

Current age	Percent currently using												Number of women
	Any method	Pill	IUD	Injection	Vaginal methods	Condom	Female sterilization	Male sterilization	Periodic abstinence	Withdrawal	Other	Prolonged abstinence	
15-19	30.3	7.1	3.8	5.3	0.6	0.8	0.0	0.0	6.7	5.4	0.0	0.6	141
	(20.2)	(7.2)	(1.1)	(0.7)	(0.0)	(0.8)	(1.0)	(0.0)	(5.0)	(3.4)	(0.0)	(1.1)	(127)
20-24	53.6	12.3	5.0	12.0	0.0	2.4	3.5	0.5	9.3	7.3	0.1	1.1	722
	(42.3)	(6.9)	(2.4)	(7.1)	(0.0)	(1.5)	(5.9)	(1.9)	(11.8)	(3.3)	(0.0)	(1.6)	(695)
25-29	60.7	9.2	5.0	8.7	0.0	3.2	12.5	1.2	14.8	4.6	0.1	1.5	1101
	(57.3)	(7.0)	(2.3)	(4.5)	(0.1)	(1.7)	(17.3)	(4.8)	(14.6)	(3.4)	(0.0)	(1.4)	(1071)
30-34	67.4	6.5	3.2	4.5	0.0	5.4	21.3	4.0	15.8	5.5	0.2	1.0	1287
	(66.8)	(4.2)	(2.0)	(2.7)	(0.0)	(2.3)	(26.9)	(7.2)	(15.9)	(4.3)	(0.1)	(1.4)	(1146)
35-39	76.7	4.1	2.9	3.2	0.0	3.8	32.3	5.3	18.4	4.9	0.0	1.8	1173
	(73.8)	(2.9)	(1.4)	(1.3)	(0.0)	(2.2)	(35.8)	(6.2)	(17.6)	(4.5)	(0.0)	(1.8)	(1044)
40-44	74.4	1.7	1.3	0.9	0.0	3.1	35.5	5.0	18.4	5.5	0.0	3.1	1115
	(71.5)	(1.1)	(2.5)	(0.3)	(0.0)	(2.3)	(37.0)	(4.7)	(17.3)	(2.5)	(0.0)	(3.9)	(824)
45-49	62.4	0.5	0.7	0.3	0.0	1.4	33.7	5.6	12.4	2.5	0.0	5.2	894
	(56.1)	(0.7)	(2.7)	(0.0)	(0.0)	(1.0)	(26.3)	(3.4)	(10.7)	(0.8)	(0.2)	(10.4)	(535)
Total	66.1	5.5	3.0	4.6	0.0	3.3	23.5	3.7	15.2	5.0	0.1	2.2	6434
	(61.7)	(4.1)	(2.1)	(2.7)	(0.0)	(1.9)	(24.9)	(4.9)	(14.9)	(3.4)	(0.1)	(2.8)	(5442)

Note: 1. Figures within parentheses are from DHS87.
2. Vaginal methods are diaphragm, foam and jelly.

women in that age group. It is significant that despite considerable probing in the questionnaire, only 2.2 percent of all currently married women say that they are practicing prolonged abstinence to avoid pregnancy.

Current use of contraception by sector, parity, education and desire for children are shown in Table 3.12. Estates have become prominent in respect of 4 features. First, estate sector has the highest percentage (45.5 percent) of non current users among all sectors. This is a slightly lower level than in 1987. Second, 44.4 percent of estate women use sterilization, again the highest percent among all sectors. Use of sterilization among estate women has increased by 11 percent during the period 1987-1993. Third, only 7.0 percent of estate women use traditional methods, the lowest percent among all sectors. Finally only 3 percent are currently using a modern temporary method, again the lowest among all sectors. It is important to mention that among the users of estate women, nearly 81 percent use sterilization and the same pattern prevailed at 1987 as well.

Among zones, percentage of non use varies in a narrow range of 28.9 percent to 37.3 percent and no significant variation can be seen among the users of modern temporary methods. Sterilization users are higher in zone 5 (36.9 percent) and in zone 6 (36.1 percent) but users of traditional methods are lower in those two zones (11.2 percent and 15.9 percent respectively).

There is a strong relationship between parity and current use of contraception. This is particularly true for the use of sterilization. Non use is highest (88.3 percent) among the women with no children and it decreases to 20 percent by parity 3. When the parity increases percent of non use decreases as expected. Use of modern temporary methods has increased for each parity when compared with 1987. Among the women with 3 children sterilization users are 45.3 percent and other users are 34.8 percent. Among the women with 4 or more children, 53.1 percent are users of sterilization and 26 percent are other users.

Table 3.12 Current use of contraceptives by background characteristics

Percentage of currently married women by current use of contraception and background characteristics

Background characteristic	Current use of contraception				Total	Number of women
	Not currently using	Using modern temporary	Sterilized	Using traditional methods		
Sector						
Colombo metro	37.3 (37.4)	16.2 (9.9)	21.5 (29.8)	25.1 (22.9)	100	793 (521)
Other urban	42.3 (31.6)	16.0 (13.5)	20.8 (29.4)	20.8 (25.5)	100	465 (364)
Rural	31.7 (38.1)	17.6 (11.3)	27.6 (29.0)	23.2 (21.6)	100	4836(4210)
Estate	45.5 (48.8)	3.1 (3.6)	44.4 (40.0)	7.0 (7.6)	100	340 (347)
Zone						
Zone 1	37.3 (37.4)	16.2 (9.9)	21.5 (29.8)	25.1 (22.9)	100	793 (521)
Zone 2	28.9 (32.9)	17.4 (11.2)	23.7 (26.1)	29.9 (29.6)	100	1049 (855)
Zone 3	36.0 (36.3)	16.0 (9.2)	20.6 (24.7)	27.4 (29.8)	100	870 .(752)
Zone 4	32.4 (38.2)	16.2 (12.1)	26.6 (29.3)	24.6 (20.3)	100	1323(1245)
Zone 5	36.3 (42.6)	15.7 (10.8)	36.9 (34.4)	11.2 (12.1)	100	1253(1081)
Zone 6	32.8 (37.7)	19.5 (8.7)	36.1 (35.5)	15.9 (18.2)	100	414 (377)
Zone 7	34.1 (41.9)	16.2 (11.3)	28.6 (30.6)	21.2 (16.2)	100	731 (610)
Parity						
0	88.3 (93.4)	3.6 (1.0)	0.9 (1.2)	7.2 (4.3)	100	609 (462)
1	47.6 (56.5)	24.8 (13.9)	1.7 (1.8)	25.9 (27.8)	100	1249 (913)
2	27.3 (36.7)	25.9 (17.8)	15.7 (16.6)	31.0 (28.9)	100	1610(1197)
3	20.0 (23.5)	14.4 (12.2)	45.3 (42.9)	20.4 (21.4)	100	1324(1073)
4+	21.0 (24.8)	7..6 (6.2)	53.1 (52.4)	18.4 (16.6)	100	1642(1797)
Education						
No education	41.8 (46.0)	7.2 (4.6)	40.6 (39.2)	10.4 (10.2)	100	497 (579)
Primary	31.1 (36.5)	11.8 (8.1)	41.4 (39.8)	15.7 (15.6)	100	1493(1581)
Secondary	32.2 (37.1)	18.2 (12.4)	26.4 (28.3)	23.2 (22.2)	100	2412(1990)
More than secondary	36.0 (39.0)	20.3 (14.3)	14.4 (15.7)	29.2 (31.0)	100	2032(1292)
Desire for children						
Wants no more	22.0 (25.3)	13.4 (8.9)	41.8 (45.8)	22.8 (20.0)	100	4190(3542)
Wants to space[1]	41.9 (53.2)	31.6 (20.5)	-	26.5 (26.4)	100	1198 (998)
Wants one soon[2]	73.9 (76.2)	11.6 (6.8)	-	14.5 (17.0)	100	803 (668)
Wants but D.K. when	75.8 (74.8)	14.5 (7.3)	-	9.7 (17.9)	100	96 (64)
Unsure	61.4 (56.9)	10.5 (10.9)	-	28.1 (32.2)	100	147 (155)
Total	33.9 (38.3)	16.5 (10.8)	27.2 (29.8)	22.4 (21.1)	100	6434(5442)

Note: Figures within parantheses are from DHS 87.
"Wants to space" is defined as wants a child after 2 or more years.
"Wants one soon" is defined as wants a child within the next 2 years.

Non use is also related to education. Highest percentage of 41.8 percent are non users among the women with no education and the lowest percentage of 31 percent are non users among the women with primary education. There is a positive relationship between the education and the use of modern temporary methods and traditional methods. Only 7.2 percent of women with no education use modern temporary methods and 10.4 percent use traditional methods. Among the women with higher education, 20.3 percent use modern temporary methods and 29.2 percent use traditional methods. Therefore, women with higher education are three times more likely to be using a modern temporary or a traditional method, than those women with no education. On the other hand, there is an inverse relationship between education and sterilization. The use of sterilization is lower among highly educated women (14.4 percent), but it is widely used by less educated women (40.6 percent).

Among the women who wants a child within next 2 years, arround 74 percent are not using a method. The pattern was similar in 1987 as well. Among the modern temporary methods, highest rate of 31.6 percent is reported by the women who wanted a child after 2 or more years.

3.3 Knowledge of the Fertile Period

Among ever-married women, 64.3 percent and among the currently married women 65.9 percent know periodic abstinence and 34.9 percent of ever-married women and 35.8 percent of currently married women have ever used periodic abstinence as a method of contraception as shown in Table 3.1 and Table 3.8. More than 15 percent of currently married women are current users of this method as shown in Table 3.9.

All women aged 15-49 (ever users and never users) were asked, the knowledge about the days during a monthly cycle, where a woman is most likely to get pregnant. A woman's knowledge of the fertile period was based on the answers given by them to that question. Table 3.13 examines the knowledge of the fertile period during the ovulatory cycle among ever users of periodic abstinence and never users of this method.

Among all ever-married women, nearly half (47.9 percent) know the fertile period as the middle of the cycle. About one third reported that they do not know anything about the fertile period. Among the never users of periodic abstinence, 35 percent correctly named the middle of the cycle as the most fertile period. Among the ever users of periodic abstinence nearly three fourths (71.8 percent) could correctly identify the fertile period as being the middle of the cycle. It indicates that little above one fourth of ever users of periodic abstinence could not identify correctly the time of greatest risk of pregnancy.

Table 3.13 Knowledge of the fertile period

Percentage of ever-married women aged 15-49 by ever use and never use of periodic abstinence and the knowledge of the fertilile period during the ovulatory cycle.

Fertile period	Knowledge among		
	Ever users of periodic abstinence	Never users of periodic abstinence	All ever married women
During the period	0.2	0.7	0.5
After the period	17.3	12.8	14.3
Middle of cycle	71.8	35.0	47.9
Before period	2.3	3.2	2.9
At any time	0.5	2.0	1.5
Other response	1.1	0.3	0.6
Don't know	6.7	46.0	32.3
Total	100	100	100
Number of women	2434	4549	6983

3.4 Age at Sterilization

Percentage distribution of sterilized women by age at sterilization and number of years since sterilization is given in Table 3.14. Of the total women who reported sterilization as a method of contraception, 22 percent were sterilized less than 4 years before the survey and 32.1 percent were sterilized 12 or more years before the survey. The other half were sterilized within 4 to 11 years before the survey. In 1987, 51 percent of the women who sterilized were sterilized less than 4 years before the survey. In 1993, it has dropped to 22 percent. In 1987, 12.4 percent of the women who sterilized, were sterilized 10 or more years before the survey. In 1993 it has increased to 45.5 percent. This may partly due to the decrease of use of female sterilization as a method of contraceptive.

There has been relatively little change in the median age at which women were sterilized. Among women who have been sterilized less than 4 years ago, the median age at sterilization was 30.9 years. This is slightly higher than the overall median age at sterilization (29.4 years).

Table 3.14 Age at sterilization

For sterilized women, the percent distribution by age at the time of sterilization, according to the number of years since the sterilization.

Years since operation	Age at sterilization					Total	Number of women	Median age
	<25	25-29	30-34	35-39	40+			
< 4	11.8	30.0	33.4	20.5	4.3	100	365 (725)	30.9 (30.0)
4 - 5	20.7	29.8	30.2	15.6	3.7	100	126 (245)	29.8 (30.3)
6 - 7	19.7	29.4	29.1	17.9	3.9	100	182 (117)	30.3 (30.9)
8 - 9	19.8	27.5	34.4	17.2	1.1	100	219 (146)	30.3 (30.5)
10 - 11	16.6	39.7	25.2	18.6	0.0	100	219 } (176)	29.4 (30.6)
12+	19.4	48.1	29.0	3.6	0.0	100	526 }	28.3 (29.6)
Total	17.5	36.7	30.3	13.7	1.8	100	1637 (1420)	29.4 (30.3)

Note: Figures within parantheses are from DHS 87

3.5 Number of Living Children at the Time of First Use

As it is obvious that more couples have become motivated to initiate family planning use during their family building process, a question was included in the questionnaire to find how many living children they had when they first used a method. However, the motivation to use family planning may either be to space births or to limit family size. Information recorded for this question cross classified by the current age of ever-married women is given in Table 3.15.

As expected, very few women (10.5 percent) of those who had ever used contraceptives initiated contraceptives before the first birth. Approximately 55 percent initiated before the second birth, 74 percent before the third child. As such, it indicates that there is a tendency to initiate family planning methods by lower parity women than older women. Little more than 50 percent of ever married women of each are group 20-24 and 25-29 have initiated contraceptives before the second child. Initiation of contraceptives before the second birth is low for the other age groups when compared to the age group 20-29. It is obvious that the women in the group 15-19 who have ever used contraceptives initiated it before the third child and the women in the group 20-24 initiated before the fourth child.

Table 3.15 Living children at the time of first use

Percent distribution of ever-married women aged 15-49 by number of living children at the time of first use of contraception by current age.

Current age	Never used	Number of living children when first used contraception						Total	Number of women
		0	1	2	3	4+	Dont know		
15-19	59.6	18.6	19.1	2.7	0.0	0.0	0.0	100	146
20-24	33.0	17.7	38.2	9.2	1.9	0.0	0.0	100	751
25-29	25.0	11.7	41.2	13.6	5.3	3.2	0.0	100	1145
30-34	19.4	7.8	40.5	16.6	9.8	5.9	0.0	100	1352
35-39	16.9	5.8	33.8	17.9	14.3	11.3	0.1	100	1275
40-44	22.6	3.5	28.7	15.7	13.9	15.4	0.2	100	1255
45-49	26.7	3.6	22.0	13.5	12.4	21.6	0.1	100	1060
Total	23.8	8.0	33.8	14.6	10.0	9.8	0.1	100	
Number of women	1664	556	2357	1021	697	683	5		6983

3.6 Source of Contraceptive Supply and Satisfaction with Source

A question on " the most recent supply source" was included in the questionnaire in order to evaluate the family planning delivery sources. Government sources including hospitals, MCH centres, government family health workers and nurses are the primary sources of contraception for about 83 percent of all current users as shown in Table 3.16. Beside the government sources, 11.8 percent obtained their methods from a private doctor, a pharmacy or a shop. Pharmacies and shops are the important source for condom (45.8 percent) revealing the importance of commercial contraceptive retail sales programme. For supply methods, 60.2 percent of current users obtained the methods from a government source and another 31.8 percent obtained the methods from a private doctor or a pharmacy or a shop. For clinical methods, more than 90 percent used a government source. This is clearly seen in Figure 3.5.

Current users who obtained a method from a source other than through friends, relatives, pharmacies, shops and others and those who reported "don't know" were asked about the satisfaction with the service. As indicated in Table 3.17, for each source of supply more than 94 percent stated that they did not have any complaint against the services provided at a source of supply.

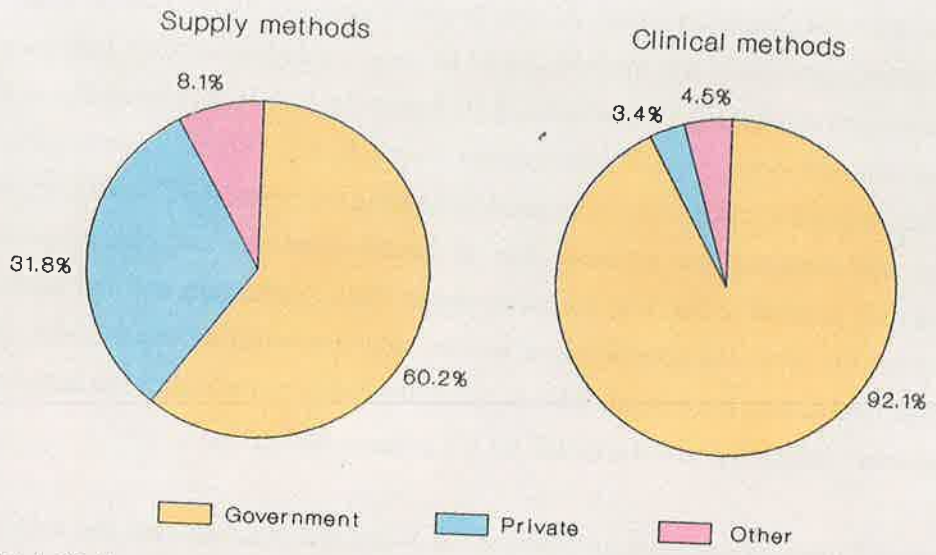
Table 3.16 Source of supply by specific method

For all current users of constraceptive methods, the percent distribution according to most recent source of supply by method.

Source of supply	Supply methods					Clinical methods				Total all methods
	Pill	Injec-tion	Vaginal methods	Condom	Total	IUD	Female sterili-zation	Male sterili-zation	Total	
Government Hospital/ MCH Centre	16.1	57.4	0.0	7.5	28.1	83.1	92.6	87.6	91.1	72.5
Private Doctor/ Private nursing home	9.2	23.9	100.0	6.2	13.6	4.7	3.4	2.6	3.4	6.4
Non Government Clinic	1.1	0.3	0.0	0.8	0.7	2.1	3.3	6.6	3.6	2.8
Mobile Clinic	4.7	3.1	0.0	0.0	3.0	1.5	0.0	1.2	0.3	1.1
Family health worker/ Nurse	50.2	13.5	0.0	27.9	32.1	8.2	0.3	0.0	1.0	10.2
Other field workers	0.1	0.6	0.0	0.5	0.4	0.0	0.1	0.0	0.1	0.2
Ayurvedic doctor	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Friend/ Relative	2.0	0.2	0.0	6.1	2.4	0.0	0.0	0.0	0.0	0.7
Pharmacy/ Shop	16.3	0.6	0.0	45.8	18.2	0.0	0.0	0.0	0.0	5.4
Other	0.0	0.6	0.0	1.9	0.7	0.0	0.2	1.6	0.3	0.4
Dk/ Not stated	0.2	0.0	0.0	3.3	0.9	0.0	0.2	0.5	0.2	0.4
Total	100	100	100	100	100	100	100	100	100	100
Number of women	355	297	1	214	867	192	1638	238	2068	2935

Note:- Vaginal methods are diaphragm, foam and jelly.

Figure 3.5 - SOURCES OF FAMILY PLANNING AMONG CURRENT USERS OF MODERN CONTRACEPTIVE METHODS



Note: 1. As the percentage of don't know category is very low, it was included under "Other" category.
2. Government Source - Govt.hospital, MCH centre, Family health worker, Nurse.
3. Private Source - Private Doctor, Private nursing home, Pharmacy, Shop

Table 3.17 Source of supply and dissatisfaction with service

Among current users of contraception obtaining a method at a source, the percent distribution by type of dissatisfaction with the service (if any), according to type of source last visited.

Source of supply	Dissatisfaction with service							Total	Number of women
	No complaint	Wait too long	Staff discourtious	Service expensive	Desired service unavailable	Other	Not stated		
Government Hospital/ MCH Centre	97.0	0.4	0.2	0.2	0.5	0.7	1.1	100	2131
Private Doctor/ Private nursing home	95.0	0.0	0.0	4.5	0.1	0.5	0.0	100	189
Non Government Clinic	94.1	0.0	0.0	1.2	0.0	1.8	2.9	100	82
Mobile Clinic	94.7	0.0	0.0	5.3	0.0	0.0	0.0	100	31
Family health worker/ Nurse	95.9	1.6	0.0	0.7	0.0	0.6	1.3	100	299
Other	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100	6
Total	96.6	0.5	0.2	0.6	0.4	0.7	1.1	100	2737

3.7 Reasons for Method Discontinuation

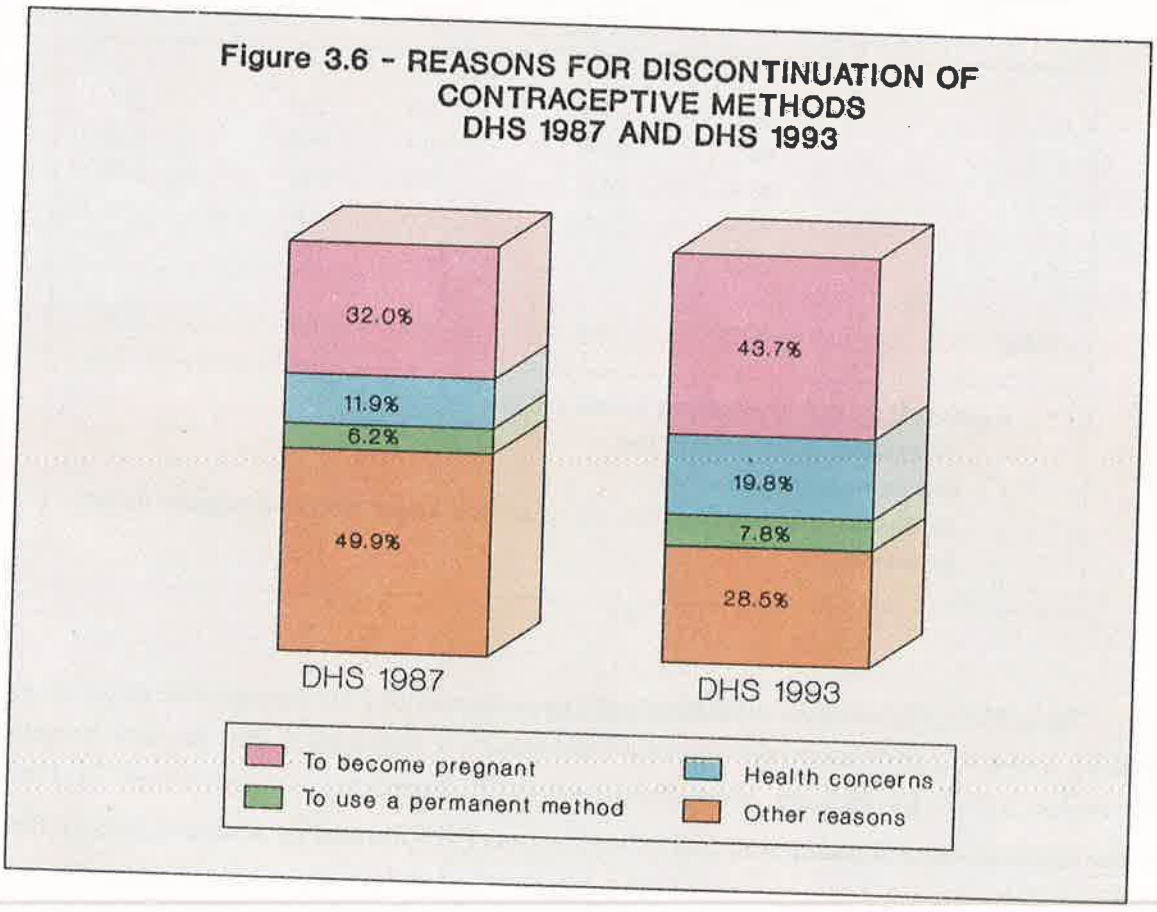
Women who have discontinued a method in the five years preceding the survey were asked about the main reason for discontinuation. As one might expect, the highest proportion of women (43.7 percent) who discontinued the method did so as they wanted to become pregnant as given in Table 3.18. Another substantial proportions of 19.8 percent and 28.5 percent discontinued the method because of health concerns and other reasons respectively. About 8 percent discontinued the method as they wanted to use a permanent method. During the period 1987-1993, the proportion of women who discontinued the methods due to health concerns and the proportions who discontinued as they wanted to become pregnant and to use a permanent method have increased as shown in Figure 3.6. But , the proportion of women who discontinued the method due to other reasons has decreased during the period. This is particularly due to the reduction in the proportion of "method failures" from 28 percent in 1987 to 1.9 percent in 1993.

Among 517 users of periodic abstinence, 62.5 percent discontinued the method as they wanted to become pregnant. Another 9 percent discontinued for the purpose of using a permanent method. Same pattern can be observed among the withdrawal users as well. Fifty percent wanted to become pregnant and 13 percent wanted to use a permanent method. Among the users of IUD and injection, "health concerns" (30.9 percent and 39.7 percent respectively) is the major reason for motivation of the method discontinuation. The second largest proportion of women discontinued IUD and injection (29.4 percent and 24.3 percent respectively) to become pregnant. For the users of pill, "to become pregnant" is the main reason (39.2 percent) followed by "health concerns" (33.4 percent). Out of those who have used condom, 47.8 percent have stated that they discontinued the method as they wanted to become pregnant and another substantial proportions stated that they discontinued the method as they wanted to use a permanent method (10.7 percent) and due to other reasons (12.6 percent).

Table 3.18 Reasons for method discontinuation

Percent distribution of women who have discontinued a method in the last 5 years by main reason for last discontinuation.

Main reason	Pill	IUD	Injection	Condom	Male sterili.	Periodic abstinence	Withdrawal	Other	Total
To become pregnant	39.2	29.4	24.3	47.8	0.0	62.5	50.3	33.3	43.7
Method failed	1.0	8.8	0.2	1.9	36.4	1.5	5.6	13.3	1.9
Infrequent sex	0.5	1.5	1.7	1.3	0.0	4.3	5.6	0.0	2.4
Partner disapproved	0.3	1.5	0.7	8.2	0.0	1.0	7.0	6.7	1.9
Health concerns	33.4	30.9	39.7	7.5	0.0	1.7	0.7	6.7	19.8
Availability/ Accessibility	2.3	0.0	9.4	2.5	0.0	0.0	0.0	0.0	3.0
Cost too much	0.0	0.0	2.2	0.6	0.0	0.0	0.0	0.0	0.6
Inconvenient to use	5.1	1.5	2.9	7.5	0.0	2.7	4.2	13.3	3.8
To use permanent method	5.3	5.9	5.8	10.7	0.0	9.3	12.6	20.0	7.8
Other reasons	11.1	20.6	13.0	12.6	63.6	15.7	13.3	13.3	13.9
DK/ Not stated	1.5	0.0	0.7	1.3	0.0	1.4	0.7	0.0	1.0
Total	100	100	100	100	100	100	100	100	100
Number of women	395	68	416	159	11	517	143	15	1724



3.8 Attitudes Towards Becoming Pregnant

Percentage distribution of the currently married exposed women who are not using contraceptives by attitudes towards becoming pregnant by number of children is given in Table 3.19. Of the currently married women who are exposed and not using contraception, 62.3 percent stated that they would be happy if they become pregnant in next few weeks and 32.9 percent stated they would be unhappy. The proportion of women who reported that they would be happy decreases when parity increases and the proportion of women who reported that they would be unhappy if they become pregnant increases when parity increases.

Table 3.19 Attitudes towards bocoming pregnant

Among currently married exposed* women not using contraception, the percent distribution by attitude towards becoming pregnant in next few weeks, according to number of living children.

Number of children	Attitudes towards becoming pregnant			Total	Number of women
	Happy	Not happy	Docs not matter		
0	93.2	5.0	1.8	100	211
1	66.2	28.9	4.9	100	172
2	49.9	44.5	5.5	100	117
3	22.8	72.6	4.6	100	58
4+	13.3	74.5	12.2	100	70
Total	62.3	32.9	4.7	100	628

* Exposed to the risk of pregnancy is definded as:
- menstruated in last 6 weeks and
- had sex in last 4 weeks and
- has an open interval of less than five years or if longer, used contraception during the interval.

The table 3.20 shows the distribution of currently married women who are exposed and not currently using any contraceptives and said they would be unhappy if they become pregnant by main reason for non use and age. More than one fifth (20.2 percent) of married users said they did not intend to use any contraception, due to health concerns followed by postpartum breastfeeding (12.8 percent). An equal proportions of 10.7 percent report the reasons as husbands disapproval

and infrequent sex. Among the women (242 women) who report they would not be happy if they become pregnant, 59 percent are in the age group 30+. For those who are in the age group 30+ also, the main reason is health concerns (24 percent) followed by two other reasons namely, meanpausal/ subfecundity (16 percent) and infrequent sex (13 percent). For women who are in the age group <30, main reason for non use is postpartum breastfeeding (21.2 percent). Another 29.3 percent reported husband disapproval and health concerns as reasons. It is observed that the percentage (9.6 percent) who reported lack of knowledge as the main reason in 1987 has decreased to 3.7 percent in 1993. This may be due to the better knowledge of family planning methods among women in 1993.

Table 3.20 Main reasons for non use of contraception

Among currently married exposed* women not using contraception, but who would not be happy if they become pregnant, the percent distribution by the main reason for non use, according to current age.

Main reason for non use	Age		
	<30	30+	All ages
Lack of knowledge/ Lack of source	6.1	2.1	3.7
Opposed to FP	3.0	2.8	2.9
Husband disapproves	14.1	8.4	10.7
Other people disapprove	1.0	2.1	1.7
Infrequent sex	7.1	13.3	10.7
Postpartum breastfeeding	21.2	7.0	12.8
Menopausal/ Subfecund	1.0	16.1	9.9
Health concerns	15.2	23.8	20.2
Access/ Availability	3.0	2.1	2.5
Cost too much	1.0	1.4	1.2
Religion	1.0	2.8	2.1
Inconvenient to use	1.0	2.1	1.7
Rumour of side effects	7.1	4.2	5.4
Other reasons	10.1	11.9	11.2
Don't know	7.1	0.0	2.9
Not stated	1.0	0.0	0.4
Total	100	100	100
Number of women	99	143	242

* Exposed to the risk of pregnancy is defined as:
- menstruated in last 6 weeks and
- had sex in last 4 weeks and
- has an open interval of less than five years or if longer, used contraception during the interval.

3.9 Future Use

Intention to use contraception in the future provides a forecast of potential demand for family planning services. As such, all currently married women (including currently pregnant women) not using contraception were asked whether they intend to use a method to avoid pregnancy in the future.

Among the currently married women who are currently not using a method, a little more than one third are having a definite intention of using a method in the future. Twenty two percent had an intention to use a method in the next 12 months and 10 percent wanted to use after 12 months as shown in Table 3.21. Among the women who are currently married non users, majority (47 percent) did not have an intention to use any method in the future while another one fifth have not decided anything. Only 1.4 percent of all non users who are having no children intended to use a method in the next 12 months as expected and the percentages fluctuate between 23 to 31 percent when the parity increases.

Table 3.21 Future use of contraceptives

Among currently married women aged 15-49 not currently using any method of contraception, the percent distribution by intention to use in the future, according to number of living children (including current pregnancy).

Intention to use a method	Number of children					Total
	0	1	2	3	4+	
Next 12 months	1.4	23.2	30.6	23.8	28.5	22.4
After 12 months	12.3	14.5	9.4	7.8	2.8	10.3
Undecided when to use	2.7	3.8	4.2	4.8	2.4	3.7
Undecided it will use	34.8	22.1	8.8	9.8	4.0	16.6
No intention to use	48.7	36.4	46.9	53.6	62.2	47.0
Not stated	0.2	0.0	0.1	0.2	0.2	0.1
Total	100	100	100	100	100	100
Number of women	345	694	523	307	313	2181

Currently married women who are not using a method but who intended using a method in the future were asked about the method preferred and the distribution of such women by method is given in Table 3.22. About 45 percent and 34 percent intend using a modern temporary method and a modern permanent method respectively. Only 12.8 percent reported that they intend using

a traditional method. Of 713 women who intended to use a method in the future, 68 percent stated that they wanted to use a method in the next 12 months and 32 percent wanted to use after 12 months.

Table 3.22 Method intend to use in the future

Among currently married women not currently using any method of contraception but who intend to use in the future, the percent distribution by preferred method according to whether they intend to use in the next 12 months or after 12 months.

Method intends to use	Intends to use method in		
	Next 12 months	After 12 months	Total
Pill	14.2	11.5	13.3
IUD	6.3	4.6	5.7
Injection	24.4	14.9	21.4
Condom	5.3	1.9	4.2
Female sterilization	31.3	37.7	33.3
Male sterilization	0.4	0.4	0.4
Periodic abstinence	9.9	9.2	9.7
Withdrawal	2.0	1.6	1.9
Norplant	0.4	0.3	0.4
Other	0.7	1.1	0.8
Not decided	5.2	16.8	8.9
Total	100	100	100
Number of women	488	225	713

3.10 Family Planning Messages

All ever married women were asked about their views on "the acceptance for family planning information to be provided on radio and television" and all have answered this question. Percentage distribution of ever married women those who are accepting the family planning information being given over the radio and the television by some background characteristics is given in Table 3.23. It is observed that the proportion who reported that they are accepting the information being given over the radio is higher than those accepting such information on television for each category. Much lower percentage of estate women report that they accept these two media, 62 percent and 56 percent respectively. In the urban and rural sectors, more than 80 percent accept the family planning information being given over radio, as well as television.

Table 3.23 Family planning messages

Percentage distribution of ever-married women believing that it is acceptable to have messages about family planning on the radio and television by selected background characteristics.

Background characteristic	Messages about family planning		Number of women
	Radio	T.V.	
Sector			
Colombo metro	83.3	80.0	855
Other urban	83.7	83.3	503
Rural	87.0	83.9	5242
Estate	62.0	55.5	383
Zone			
Zone 1	83.3	80.0	855
Zone 2	86.1	84.5	1114
Zone 3	85.0	82.4	941
Zone 4	88.1	85.7	1470
Zone 5	82.4	76.5	1359
Zone 6	86.4	82.4	447
Zone 7	82.5	81.2	797
Education			
No education	62.2	58.6	569
Primary	79.8	76.9	1687
Secondary	89.2	86.1	2602
More than secondary	89.9	86.8	2125
Total	84.9	81.9	6983

Variation of the percentages among zones is in significant except for zone 5 (76.5 percent) where most of the estates are located. A positive relationship can be seen between the educational levels and the acceptance of family planning messages over radio and television viz. higher the level of education, higher the percentages of women accepting family planning messages on both media.

CHAPTER 4

OTHER PROXIMATE DETERMINANTS OF FERTILITY

J. Nagendran

This chapter concerns the principal factors other than contraception, which affect a woman's risk of becoming pregnant; nuptality, breastfeeding, postpartum amenorrhea and abstinence from sexual relations, secondary infertility and induced abortions. This chapter also includes information on more direct measures of the beginning of exposure to pregnancy and the level of exposure; age at first marriage. Measures of several other proximate determinants of fertility are presented, including the durations of breastfeeding, postpartum amenorrhea, postpartum abstinence and level of secondary infertility.

Marriage is a primary indicator of the exposure of women to the risk of pregnancy and therefore is important for the understanding of fertility. The marital structure of a population directly affects population dynamics. A population in which age at marriage is low tend to be a population with early child bearing and high fertility. Marriage, divorce, separation and widowhood are demographic events that influence exposure to pregnancy and thereby affect fertility.

In the DHS, women aged 15-49 who had ever been married were interviewed using the individual questionnaire. Ever married women were identified during the household interviews and during the individual interviews. Women were asked about their current marital status - currently married, widowed, divorced or separated. Tables in this report are based on ever married and never married women.

4.1 Current Marital Status

A study of the current marital status composition of the population is an important aspect of demographic analysis as it determines the fertility level of a country directly. Marriage in Sri Lanka is essentially monogamous. Although polygamy is permitted among Muslims it is rarely practised. The term "marriage" is intended to mean legal or customary union. There is no marital status category such as "living together" as it is not socially acceptable in Sri Lanka.

As such this survey identified ever married women under five categories of current marital status (1) currently married and living together, (2) currently married but not living together, (3) widowed, (4) divorced or (5) separated. So currently married women are identified by two categories; one "living with the husband" and the other "not living with the husband". The category "currently married and living with the husband" consists of the women who are married and their husbands are at present living with them. The women in the category "currently married and not living with the husband" are those who are married and their husbands are temporarily away for reasons such as employment, migration abroad or to other parts of Sri Lanka.

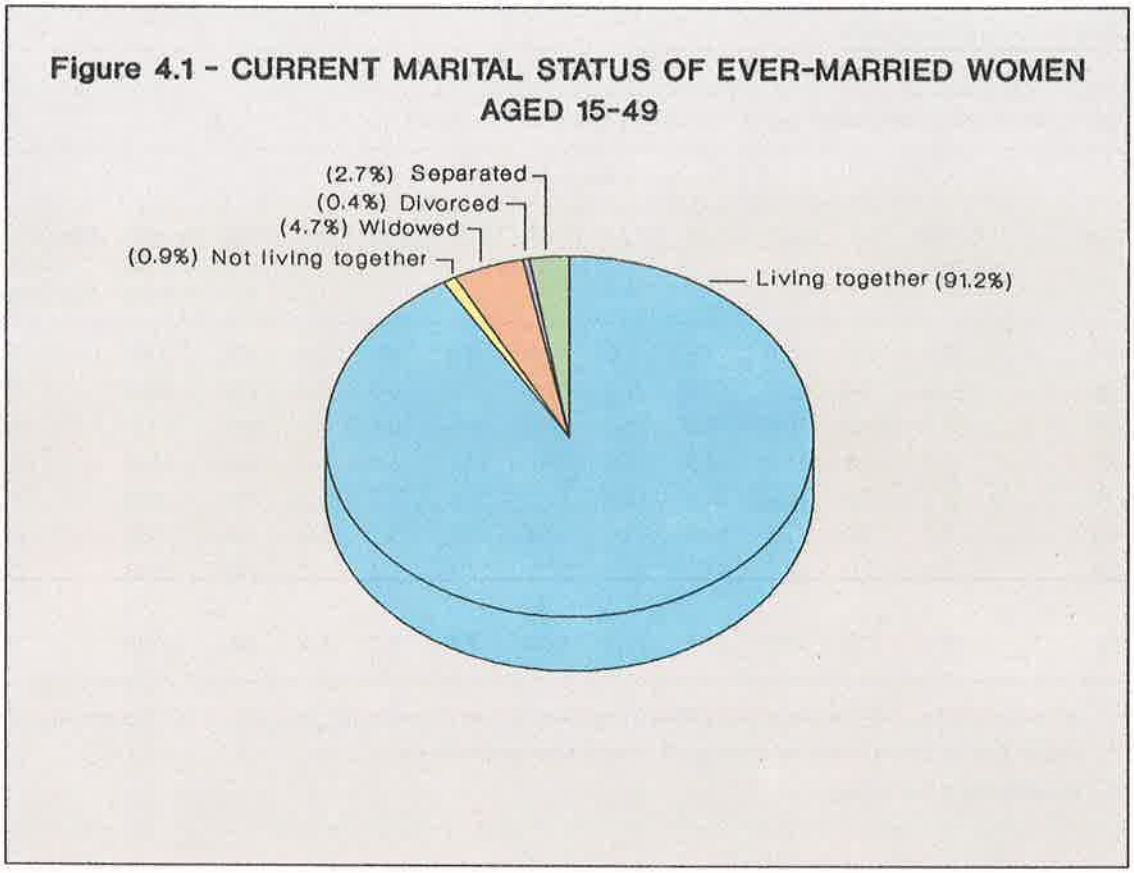
Table 4.1 Current marital status

Percent distribution of ever-married women aged 15-49 according to age by current marital status

Current age	Current marital status					Total	Numbr of women
	Currently married living together	Currently married not living together	Widowed	Divorced	Separated		
15-19	95.8	0.9	0.0	0.0	3.3	100	146
20-24	94.2	2.0	0.8	0.0	3.0	100	751
25-29	94.8	1.3	1.6	0.1	2.1	100	1145
30-34	94.1	1.0	2.3	0.2	2.3	100	1352
35-39	91.6	0.4	4.1	0.8	3.1	100	1275
40-44	88.1	0.8	7.4	0.7	3.0	100	1255
45-49	84.0	0.4	12.4	0.4	2.8	100	1060
Total	91.2	0.9	4.7	0.4	2.7	100	6983

Table 4.1 reveals the current marital status of ever married women at the time of the survey by current age. It is seen that 92.1 percent of women are currently married. This includes 0.9 percent who are currently married but not living together. Of this currently married and not living together (66 women) the highest concentration is observed in the age group 20-34 (44 women). This indicates that two-third of the women whose husbands are living away from them are in the fecund age groups which could have an impact on the fertility. This is diagrammatically illustrated in Fig. 4.1.

Widowhood increases steadily with age. Less than 1.0 percent of the women under age of 25 years are widows. It increases rapidly with age as the probability of death of their husbands increases and it is 12.4 percent among the 45-49 age group. Divorce is not prominent in the younger



age groups upto 35-39. However, the survey indicates a highest value in the age group 35-39 and thereafter decreasing to 0.4 percent in the age group 45-49. Separation is high in the younger age groups and shows a decreasing trend in the middle age group and again an increase in the older age groups. The differences among the age groups are not significant. It is possible that these figures are rather low because of deliberate concealment of these socially disapproved statuses in Sri Lanka.

4.2 Age at First Marriage

Since, child bearing takes place predominantly within marriage in Sri Lanka, the age at first marriage is an important social and demographic event. The shift towards late marriage affects the fertility level and this has been the most important factor responsible for the fertility decline in Sri Lanka.

Table 4.2 Age at first marriage

Percent distribution of all ever-married and never married women (from household schedule)* according to current age by age at first marriage and median age at first marriage according to current age

Current age	Never married	Age at first marriage							Total	Number of women	Median age at first marriage**
		<15	15-17	18-19	20-21	22-24	25-27	28-30	31+			
15-19	92.9	0.6	5.0	1.6	0.0	0.0	0.0	0.0	0.0	100	2056	***
20-24	61.2	1.6	10.5	11.9	9.3	5.6	0.0	0.0	0.0	100	1935	***
25-29	33.7	1.7	10.6	14.2	11.4	17.8	9.8	0.8	0.0	100	1727	24.0
30-34	17.7	1.8	11.9	14.5	12.8	17.1	12.3	6.8	5.1	100	1643	23.6
35-39	11.1	2.0	10.7	14.4	14.9	19.2	11.8	5.7	10.2	100	1434	23.2
40-44	9.2	3.6	11.4	14.5	14.9	17.4	12.7	5.7	10.6	100	1382	23.0
45-49	5.2	7.0	16.7	14.1	13.1	16.7	10.7	5.4	11.0	100	1118	21.8
Total	38.2	2.3	10.5	11.6	10.2	12.4	7.4	3.1	4.4	100	11295	***

* All women (taken from the household schedule) includes women ever-married, currently married and never married.

** Defined as the age by which one-half of all women have ever-married.

*** Omitted due to censoring.

Table 4.2 presents the percent distribution of ever married women by age at first marriage and their current age. The median age at first marriage is also presented in this table for cohorts aged 25 and older. For the two youngest cohorts the median age is not calculated because in each of these age groups over fifty percent of the women have not been married.

The table shows clearly an increase in age at marriage. The women who are currently aged 20-24, married at an older age than the women who are currently aged 45-49. The median age at first marriage among younger cohorts is approximately 24 years. The table shows clearly an increase in age at marriage across cohorts. Median age at first marriage appears to be rising from about 21 years among women in their forties to 24 years among women in their twenties.

Another approach to identify the trend in age at marriage is comparing cohort trends in the percent of women who have married by a certain age in all cohorts who have passed that age. For example the proportion of women married by age 20 in the age cohorts 20-24, 25-29, 30-34 and 35-39 has varied from 24 to 28 percent. Among the older age cohorts 40-44 and 45-49 the ever married proportion by age 20 is higher at 30 and 38 percent respectively. It is more useful to examine the proportions of ever married women to an older age as the age at marriage in Sri Lanka tends to be high. When the pivotal age is shifted to 25, the proportion ever married before they reach

this age declines sharply from 68 percent for the age group 45-49 to 56 percent for the 25-29 age cohort. In the younger cohorts 25-29, 30-34 the proportion married by age 25 is more than half and it shows that more women in younger cohorts appear to have delayed marriages than women in older cohorts.

Table 4.3 Proportion of ever-married women

Proportion of all women in five year age groups who have ever-married, and singulate mean age at marriage (SMAM) 1963 Census, 1971 Census, 1975 WFS, 1981 Census, 1987 DHS, and 1993 DHS.

Age group	Proportion ever-married					
	1963 Census	1971 Census	1975 WFS	1981 Census	1987 DHS	1993 DHS
15-19	14.8	10.6	6.8	9.9	7.3	7.1
20-24	57.6	46.8	39.4	44.7	42.9	38.8
25-29	81.0	75.4	68.1	69.6	70.0	66.3
30-34	88.6	89.1	86.3	84.2	85.8	82.3
35-39	89.8	94.2	94.2	91.1	90.9	88.9
40-44	86.1	95.3	95.4	94.1	93.8	90.8
45-49	81.6	95.9	97.9	95.5	96.5	94.8
SMAM	22.1	23.5	25.1	24.4	24.8	25.5

Changes in marriage patterns over a period of time are also evident from an examination of changes in the singulate mean age at marriage (SMAM). The percent of women who have ever been married among five year age cohorts for the censuses of 1963, 1971 and 1981 and the WFS75, DHS87 and DHS93 is shown in Table 4.3. The table also indicates the singulate mean age at marriage. This is based on the percentage of never married within each age group at a specific point of time.

The SMAM has taken an upward trend from 1963 census to WFS75 and slightly decreased in 1981 and then it shows an upward trend. In DHS93 it shows a slight increasing trend. A comparison of the proportion of ever married women derived from the DHS87 and DHS93 indicates that substantial changes in marriage patterns took place between the two surveys. The proportion of ever married women decreases for each age group, the changes are particularly striking at ages 20-29, which has traditionally been the child bearing period for women. On the other hand, the total of never married proportion has increased by nearly 2 percent, increase from DHS87.

Table 4.4 Median age at first marriage and singulate mean age at marriage by background characteristics

Median age at first marriage among all ever-married women (from household schedule)* aged 25-49 and singulate mean age at marriage by background characteristics

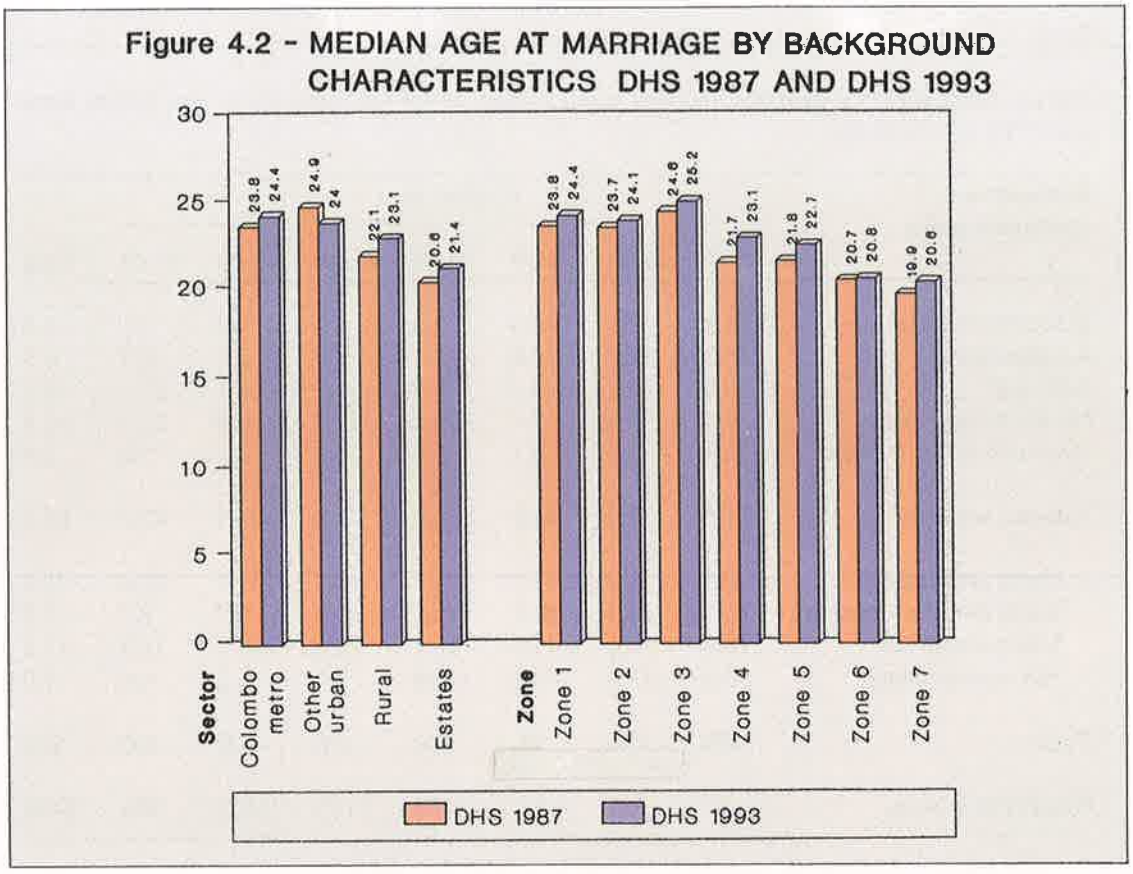
Background characteristic	Current age					Median age at marriage aged 25-49	Singulate mean age at marriage aged 15-49
	25-29	30-34	35-39	40-44	45-49		
Sector							
Colombo metro	24.8	24.7	24.1	23.9	24.1	24.4	24.3
Other urban	24.4	26.2	23.3	24.1	22.1	24.0	25.1
Rural	24.0	23.2	23.2	22.8	21.7	23.1	25.0
Estate	20.4	22.6	21.8	21.4	21.2	21.4	24.6
Zone							
Zone 1	24.8	24.7	24.1	23.9	24.1	24.4	24.3
Zone 2	24.5	24.1	24.7	23.7	23.1	24.1	25.7
Zone 3	25.9	26.5	24.6	25.5	23.6	25.2	25.9
Zone 4	24.4	23.3	23.1	22.7	21.0	23.1	25.2
Zone 5	23.2	23.2	23.3	22.4	21.1	22.7	24.6
Zone 6	21.1	20.1	20.4	20.7	19.7	20.8	23.7
Zone 7	21.9	21.0	19.9	18.9	19.2	20.6	23.7
Total	24.0	23.6	23.2	23.0	21.8	23.2	25.5

* All women (taken from the household schedule) includes women ever-married, currently married and never married.

An even more direct interpretation of the central age at marriage is simply the median age that is age by which half of the women have entered into first marriage. The information presented in Table 4.4 gives the trends and differentials in the median age at marriage in 1993 among all women. The highest median value, 26.5 is shown in zone 3 among the age cohort 30-34. The lowest median value, 18.9 is among the age cohort 40-44 in zone 7. These levels and trends are depicted in Fig. 4.2.

There is not a great deal of variation in the median age at first marriage, by sectors for all age groups. The Colombo metro has the highest value of 24.4 years. Women in estates marry earliest (21.4 years) followed by women in rural (23.1 years) and those in other urban areas (24.0 years). These differences persist in all age groups. In DHS87 the highest median age at marriage was 24.9 for the women in other urban areas. The pattern has slightly changed, during 1987 and 1993.

Figure 4.2 - MEDIAN AGE AT MARRIAGE BY BACKGROUND CHARACTERISTICS DHS 1987 AND DHS 1993



The singulate mean age at marriage of a population represents, the average number of years lived in the single state by those of a cohort who would marry according to the current age pattern of marriage in that population and would eventually be married by the age of 50 years. Singulate mean age at marriage has been computed for sectors and zones for DHS93. It shows less variation among sectors and it varies from 24.3 years (Colombo metro) to 25.1 years (other urban areas). This is similar to the pattern observed in median age at marriage. Among the zones the singulate mean age at marriage is highest in zone 3 (25.9 years). This is in accordance with the median age at marriage. Even the lowest singulate mean age at marriage is in the zone which has the lowest median age at marriage.

In Table 4.5 the data on exposure are given. The categories in this table are hierarchical in the order presented. That is, first pregnant women are selected from currently married women aged 15-49. Then nonpregnant women are checked to see whether they are amenorrheic. Those not amenorrheic are then checked to see if they are infecund (ie whether they have had a non-contraceptive open birth interval of atleast five years). Women who are found to be fecund are then checked to see if they report having sexual intercourse in the last month, a category that will include postpartum abstinence. Women who have had sex in the last month all then checked

Table 4.5 Exposure to conception status

Percent distribution of currently married women aged 15-49 by exposure to conception status according to current age

Exposure to conception status	Current age							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Currently pregnant	24.8	17.5	10.3	9.6	2.5	1.0	0.1	6.8
Amenorrheic	13.5	12.0	12.0	6.7	4.8	1.5	0.7	6.3
Infecund*	0.0	1.0	3.4	5.3	8.2	18.1	28.1	10.3
No sex in last 4 weeks	4.3	8.2	9.4	10.5	10.7	14.5	23.4	12.4
No period in last 6 weeks	2.8	4.0	2.1	1.9	1.3	2.3	5.0	2.6
Exposed women**	54.6	57.3	62.9	66.0	72.6	62.5	42.7	61.6
Using sterilization	0.0	3.0	11.3	21.5	32.3	31.1	21.6	20.9
Using modern temporary	13.5	24.7	21.0	15.6	11.7	5.7	2.2	13.2
Using traditional	10.6	14.1	17.5	18.1	21.6	20.5	12.5	17.7
Not contracepting	30.5	15.5	13.1	10.8	7.1	5.2	6.4	9.9
Total	100	100	100	100	100	100	100	100
Number of women	141	722	1101	1287	1173	1115	894	6434

* Has a non-contraceptive open birth interval of at least five years.

** Exposed to the risk of pregnancy is the sum of the percent using sterilization, modern methods, traditional methods or not using any method. It is defined as women who have:
- menstruated in last six weeks and
- had sex in last four weeks and
- an open birth interval of less than five years or, if longer used contraception during the interval.

to see whether they have reported having a menstrual period in the last six weeks, a group that could include some menopausal women not already classified in the preceding categories as well as premenarchial women, and who have just become pregnant but do not recognize their condition, all remaining women are regarded as exposed.

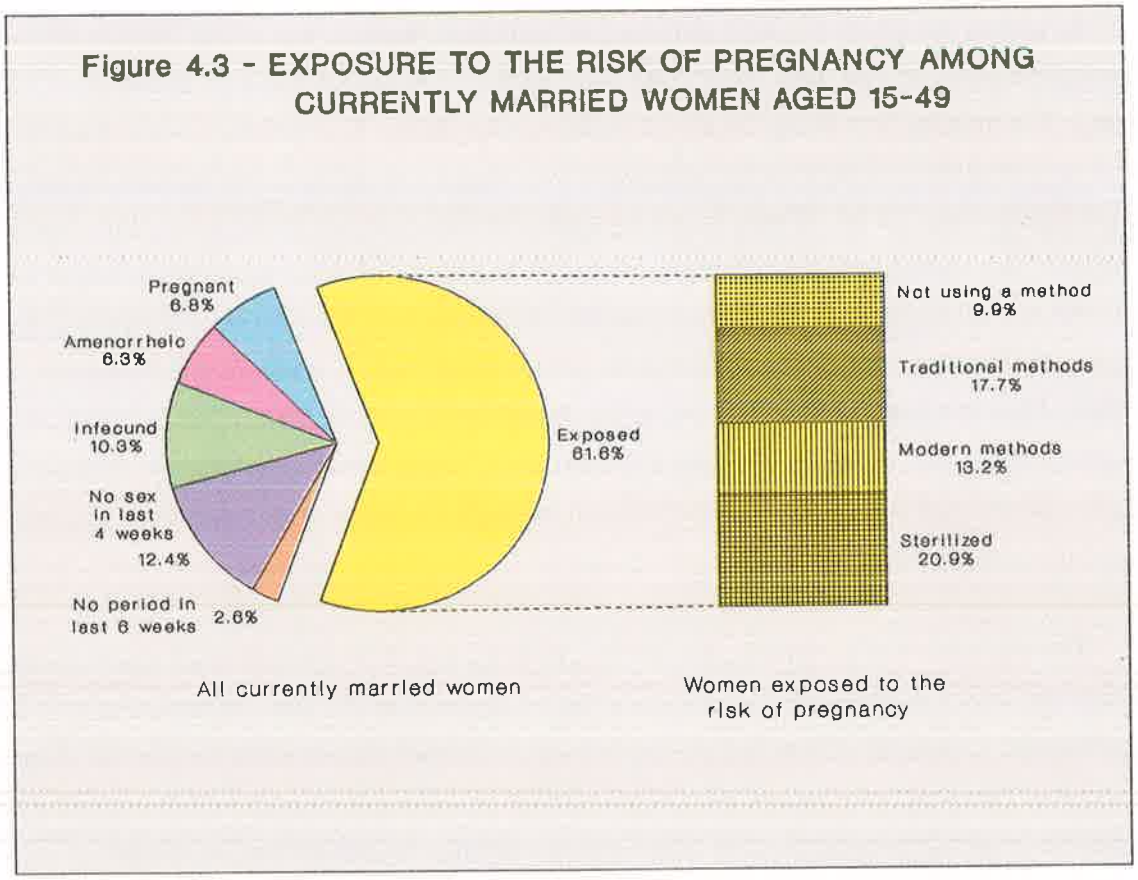
Exposure as used here is a theoretical concept. Many of these exposed women are protected through the use of some form of contraception. Because of this, Table 4.5 checks the contraceptive status of the group and lists those using either male or female sterilization, modern temporary methods, traditional methods or no method.

A higher proportion (20.9 percent) of exposed women are using sterilization as a contraceptive method and this proportion is remarkably high for the age group 35-39 (32.3 percent). The next highest being the use of traditional methods (17.7 percent), where as only 13.2 percent are using modern temporary methods. Using modern temporary methods are higher in the younger age groups 20-24. There could be some overlap between categories. For example a woman could be classified in the infecund category who also did not have sex in the past four weeks, or who did not have a period in the last six weeks. A woman could also be classified as not having had sex in the last four weeks or a period in the last six weeks who is also using sterilization. Thus the order of the category in the table will affect the frequency of "no sex in the last four weeks", "no period in the last 6 weeks", "using sterilization", "using modern temporary methods" and "using traditional methods". The categories such as pregnant, amenorrheic, infecund and exposed are mutually exclusive.

The prevalence of pregnancy rate is 6.8. These are confirmed pregnancies based on a report by a woman, which is then checked for consistency against her last date of menstruation. Some pregnancies in very early stages may not have been confirmed and hence not reported. Since the proportion of non pregnant women who had no period in the last six weeks before interview is 2.6 percent, the level of unreported early pregnancies probably do not exceed this figure.

The pregnancy rates are higher in the younger age groups and it declines with age. Out of pregnant women, a little less than two third (62.2 percent) are below age 35. Over age 35 the pregnant women are relatively low as they are completing the process of child bearing earlier. The pregnancy rate has remained relatively constant when compared to DHS87 (6.9 percent). Fig. 4.3 graphically presents the percent of exposed women protected through the use of contraception.

The infecundity women in the sample is 10.3 percent. This is higher than the DHS87 which was reported as 9.4 percent. As expected the level of infecundity is highest in the oldest age group, women aged 45-49 (28.1 percent). It shows a monotonic decline among the younger age group.



Women who are potentially exposed to conception, among all currently married women are 61.6 percent. However 84.0 percent of them are using some form of contraception. The women who are exposed and not currently using any method of contraception is only 16.0 percent. This proportion is high in the younger age groups because they are probably seeking pregnancy. Among the older women it shows a declining trend as they have completed their fertility.

4.3 Breastfeeding, Amenorrhea, Abstinence and Insusceptibility

With the commencement of fertility surveys in Sri Lanka in WFS75 and the possibilities for making indepth inquiries, demographers have increasingly turned their attention to proximate determinants of fertility such as exposure to risk of conception. The DHS93 collected information on breastfeeding which has a negative effect on fertility through the mechanism of lactational infecundibility. In this survey the detailed information were collected on postpartum amenorrhea, abstinence and insusceptibility also.

Following a childbirth each woman experiences a period of temporary infecundibility commonly referred to as the postpartum non susceptible period during which she does not ovulate. For women who breastfed their children for fairly long periods of time, lactational infecundibility has helped to keep fertility in check. Decline in this period of lactation would lead to shorter birth intervals and to an increase in fertility, unless other factors compensate for its effects. Breastfeeding also can prolong postpartum protection from conception by lengthening the duration of amenorrhea (the period following a birth prior to return of menses) and by delaying the resumption of sexual relations. Women who are insusceptible are defined as those who are either amenorrheic or abstaining following a birth and thus not exposed to the risk of pregnancy.

The estimates shown in Tables 4.6 and 4.7 are based on current status data. Table 4.6 shows the percentage of births, whose mothers are currently breastfeeding, amenorrhea, abstaining from sexual relations and insusceptible. All births during the three years prior to the survey are included.

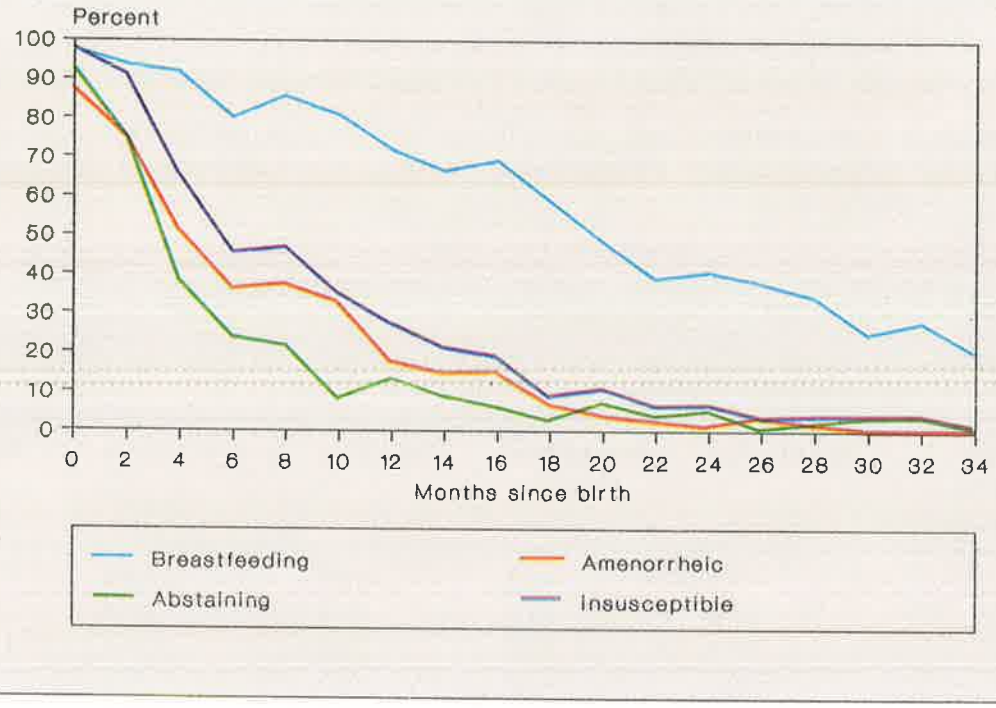
Table 4.6 Breastfeeding, postpartum amenorrheic, abstinence and insusceptibility

Proportion of births in the last 36 months who are being breastfed and whose mothers are still amenorrheic, abstaining, and insusceptible by number of months since birth.

Months since birth	Breastfeeding	Amenorrheic	Abstaining	Insusceptible	Number of births
<2	97.7	89.8	97.7	98.9	88
2-3	98.6	74.6	82.4	93.0	142
4-5	93.4	45.5	28.1	54.5	121
6-7	86.7	27.4	18.5	37.8	135
8-9	83.5	30.4	9.5	35.4	158
10-11	76.6	14.4	11.7	25.2	111
12-13	71.0	13.7	9.7	19.4	124
14-15	74.6	9.0	9.0	16.4	122
16-17	65.0	7.9	3.6	10.0	140
18-19	61.7	4.3	7.1	10.6	141
20-21	60.4	6.3	3.6	9.9	111
22-23	59.4	3.0	3.8	6.8	133
24-25	45.3	6.3	3.1	7.0	128
26-27	44.4	0.9	0.9	1.7	117
28-29	35.6	1.9	4.8	6.7	104
30-31	35.6	5.0	1.0	5.9	101
32-33	27.6	2.4	2.4	3.1	127
34-35	26.3	0.0	2.6	2.6	114
Total	64.2	18.7	15.9	19.0	2219
Median	12.9	4.4	3.5	5.6	

The data reveals that more than half (59.4 percent) of children who are almost two years of age are being breastfed at the time of survey. More than 75 percent of infants are being breastfed during the first year of their lives. Nearly 25 percent of the children just below three years of age are still being breastfed.

Figure 4.4 - PERCENTAGE OF BIRTHS WHOSE MOTHERS ARE BREASTFEEDING, AMENORRHEIC, ABSTAINING AND INSUSCEPTIBLE



In Sri Lanka 75 percent of women remains amenorrheic for 2 to 3 months after a birth. The proportion amenorrheic 10-11 months after the birth is 14.4 percent and it declines to 6.3 and 2.4 percent at 24-25 months and 32-33 months respectively. About 98 percent of mothers are abstaining from sexual relations, for less than two months after a birth. Abstinence decreases rapidly after a birth and only 18.5 percent are abstaining during 6-7 months. It is about 12 percent at 10-11 months and afterwards it shows a smoothly decreasing trend. It also shows a decreased trend with the child's age. Postpartum amenorrhea combined with postpartum abstinence from sex leads to a relatively high proportion of women who are insusceptible to conception. The survey reveals, that 25 percent (nearly quarter) of the mothers who delivered 10-11 months prior to the survey are insusceptible to conception because of amenorrhea or abstaining. It decreased to 6.8 percent at 22-23 months after the birth. The trends are clearly explained in Fig. 4.4.

Table 4.7 Mean duration of breastfeeding, postpartum amenorrheic, abstinence and insusceptibility

Among ever-married women, the estimated mean number of months of breastfeeding, amenorrhea, post partum absitinence and post partum insusceptibility by selected background characteristics

Background characteristic	Mean number of months of: Breastfeeding	Amenorrheic	Abstaining	Insusceptible	Number of births
Age					
<30	23.1 (21.8)	7.1	5.9	9.2	1285
30+	23.0 (24.1)	6.3	5.4	8.3	934
Sector					
Colombo metro	16.4 (18.1)	4.9	5.7	7.7	252
Other urban	19.7 (17.8)	6.7	8.6	10.7	192
Rural	24.6 (23.6)	7.0	5.0	8.5	1654
Estate	22.0 (21.0)	7.4	10.7	12.8	121
Zone					
Zone 1	16.4 (18.1)	4.9	5.7	7.7	252
Zone 2	22.3 (20.5)	6.0	5.4	8.0	311
Zone 3	24.3 (21.1)	6.4	5.1	8.7	305
Zone 4	23.0 (24.3)	5.9	5.5	7.5	442
Zone 5	24.7 (22.4)	8.5	7.3	11.3	466
Zone 6	25.4 (25.0)	7.7	5.4	9.1	159
Zone 7	24.7 (26.0)	7.6	4.6	8.8	283
Education					
No education	21.8 (26.9)	6.5	6.9	9.9	145
Primary	22.9 (23.6)	7.0	6.6	10.1	463
Secondary	24.3 (23.0)	6.7	5.4	8.5	872
More than secondary	22.1 (19.6)	6.7	5.3	8.1	740
Total	23.1 (22.7)	6.7	5.7	8.8	2219

Note: Figures within parantheses are from DHS 87

Table 4.7 presents differentials in the mean duration of breastfeeding, amenorrhea, abstinence and insusceptibility. The mean is calculated by dividing the prevalence of a conditions (breastfeeding, amenorrhea etc.) by the incidence of the condition. Prevalence is defined as the number of children whose mothers are breastfeeding, amenorrheic etc. at the time of the survey. Multiple births are counted as only one birth. Ignoring the slight discrepancy caused by multiple births, the number of children being breastfed is the same as the number of breastfeeding mothers. Incidence is defined as the average number of births per month. This average is estimated by

summing the number of births over the last 36 months to overcome problems of seasonality. A simple division of the number of mothers breastfeeding at the time of survey by the average number of births per month provides a current status estimate of the mean duration in months of breastfeeding. A similar calculation is done for amenorrhea and other conditions.

Table 4.7 reveals the mean duration of breastfeeding, amenorrhea, abstinence and insusceptibility by background characteristics. The overall mean duration of breastfeeding is 23.1 months. Due to a long duration of lactation, the mean duration of amenorrhea is 6.7 months. The mean duration of abstinence is 5.7 months and insusceptibility is 8.8 months. In other words, the Sri Lankan women are insusceptible to pregnancy for 8.8 months after giving birth.

There are no marked differentials in the mean duration of breastfeeding by age. The women in Colombo metro area have the least mean duration of 16.4 months and it is less than the duration for women in rural areas who breastfed for an average of 24.6 months. The estate women have an intermediate mean duration of 22.0 months. The differentials shown by zones and education level of mothers are also less prominent. Zone 1 which is Colombo metropolitan has the lowest value of 16.4 months, while zones 5, 6 and 7 which consists of estate and dry zone areas have nearly 8.0 months higher than Colombo metro mean value. Babies whose mothers have studied secondary level are breastfed for the longest mean duration of 24.3 months.

Younger women aged below 30 years have longer period of insusceptibility, because they are amenorrheic for a longer period than older women. Estate women are amenorrheic, abstinence from sexual activities and insusceptibility for a longer period of time than other sectors perhaps due to their breastfeeding practises. A similar pattern is observed in zone 5 as well. Differences by education are small except that women with only primary education have longer duration of amenorrhea and insusceptibility.

The prevalence, length of breastfeeding and feeding patterns in Sri Lanka can be compared between two periods six years apart by using the DHS87 and DHS93 data. In DHS87 the mothers aged more than 30 years breastfed their children for a longer period than the mothers in DHS93. While the mothers aged less than 30 years in DHS93 have breastfed their children more than the mothers of DHS87. Except the Colombo metro in all other sectors the mean duration has increased and it reflects the same pattern as the rural women who breastfeed their children for longer period in both surveys. Except in zones 1-4 and 7 the DHS93 data shows an upward trend of breastfeeding than in the DHS87. There is a marked increase in the mean duration of the breastfeeding for the women with more than secondary level of education.

4.4. Termination of Exposure

In Table 4.8 two indicators on the termination of exposure, menopause and long term abstinence are shown. The onset of infertility with increasing age reduces the proportion of women who are exposed to the risk of pregnancy. Menopause is an indicator of secondary fertility. This gives the proportion of non-amenorrheic, non-pregnant currently married women whose last menstrual period occurred six or more months prior to the survey or who reported that they are menopausal. This increases rapidly with age, particularly after forties. By age 46-47, almost 21.0 percent of women have reached menopause, and the proportion increases to 44.3 percent for older women.

Table 4.8 Indicators of termination of exposure

Indicators of menopause and long term abstinence among currently married women age 30-49 years of age by age

Age	Menopause[1]	Long term abstinence[2]
30-34	0.2	0.7
35-39	0.0	0.6
40-41	0.2	2.5
42-43	4.1	3.4
44-45	7.5	4.5
46-47	20.8	6.2
48-49	44.3	11.7
Women 30-49	6.1	2.7

1. Percentage of non-pregnant, non amenorrheic currently married women whose last menstrual period occurred six or more months preceding the survey or who report that they are menopausal.

2. Percentage of currently married women who did not have intercourse in the three years preceding the survey.

Long term abstinence is also an indicator of terminal infertility. Long term abstinence which is the percentage of currently married women who did not have sexual intercourse in the three years prior to the survey is an important factor in the termination of exposure in some countries. In the younger age groups it is not so prominent but increases with age going upto 11.7 percent in the 48-49 age group.

4.5 Induced Abortions

Induced abortion is an important proximate determinant of fertility. This includes any practice that deliberately interrupts the normal course of gestation. In Sri Lanka, the law disallows the induction of abortion for any reason other than to save the life of the woman. Besides, induced abortion carries with it a social stigma, arising partly out of a religious sanction. From a religious

Table 4.9 Induced abortions by background characteristics

Percentage distribution of pregnancies resulted in induced abortion to ever-married women by selected background characteristics

Background characteristic	Induced abortions Percent
Age	
<30	16.4
30+	83.6
Sector	
Colombo metro	29.6
Other urban	12.5
Rural	19.1
Estate	38.8
Zone	
Zone 1	29.6
Zone 2	2.0
Zone 3	0.7
Zone 4	11.2
Zone 5	49.3
Zone 6	1.3
Zone 7	6.6
Education	
No education	24.3
Primary	32.9
Secondary	23.7
More than secondary	19.1
Parity	
0	15.1
1	16.4
2	23.0
3	21.7
4+	23.7
Total	100

standpoint, it would tantamount to wilful taking of life. In this Survey the data was collected on still births, spontaneous abortions and induced abortions. At the data collection stage, data was collected only on the number of pregnancies resulted in induced abortion and no further information such as the timing of such events was collected. As such only limited analysis is possible on induced abortion.

The total percent of induced abortions is 2.2. (152 abortions were reported). The induced abortions by age shows that the number of abortions done by the women over thirty years is high, (83.6 percent) of the total number of abortions nearly five times more than the younger age group.

When analyzed by sector and zone it is observed that the estate sector and zone 5 which again constitutes mainly estates shows the highest percent (38.8 percent) of induced abortion. This may be due to the fact that the estate women could be averting the births by traditional methods. One of the reason for averting the births can also be that they do not want to be pregnant many times as this can be a hinderance to their work which involves by climbing hills, carrying heavy loads etc.

Colombo metro area (zone 1) reported the next highest percent is 29.6 and this could be attributed to their living condition. It is observed that more than half (57.2 percent) of the abortions are done by women with either no education or primary education. When analyzed by parity it is observed that 15.1 percent of the women without children have had induced abortions.

CHAPTER 5

FERTILITY PREFERENCES

L.P. De Silva

5.1 Introduction

This chapter addresses questions which allow an assessment of the need for family planning services, desired family size, desired timing and unwanted fertility. To arrive at these measurements the survey respondents were asked questions concerning whether they wanted more children, if so how long they would prefer to wait before the next child and if they could start afresh how many children in all they would want. It also examines the extent of unwanted and mistimed pregnancies and the effect of the prevention of such births on the fertility rate.

Interpretation of data on fertility preferences however, has always been the subject of controversy. Survey questions have been criticized on the grounds that answers are misleading because 1) they reflect ephemal views which are held with weak intensity and little conviction and 2) they do not take into account the effect of social pressures or the attitudes of other family members, particularly the husband, who exerts a major influence on reproductive decisions.

Unlike in non-contraceptive societies, the first objection may have little relevance in Sri Lanka. The existence of widespread public family planning programmes for number of decades and high contraceptive prevalence rate denotes the strong and conscious desire to control reproductive behaviour and use of contraception to meet this need. Therefore, the findings on child bearing preferences of women in Sri Lanka may be treated with a high degree of confidence. Further, in this survey, efforts have been made to measure the intensity of views by confirming the desire to have or not to have another child.

The second objection is correct in principle. But in practice, its importance may not be true. Some surveys have revealed that there are no significant differences in the views of both husband and wife on family size. Hence it would not be unreasonable to accept wife's views as representing those of both.

The inclusion of women who are currently pregnant complicates the measurement of views on future child bearing. To avoid this situation, the questions were rephrased so that it refers to

another child after the one they are currently expecting. In considering fertility preferences, the current pregnancy is taken into account. In addition, the answers of pregnant women on preferred waiting time before the next birth presumably include the remaining gestation period of the current pregnancy and are thus not strictly comparable with the answers of non-pregnant women.

Women who have been sterilized for contraceptive purposes also require special analytic treatment. The general strategy in this chapter is to classify them as wanting no more children. But there are cases who have reported that they regret and want more children. (Table 5.1)

5.2 Desire for more children

This section examines women's desire for more children, the timing of births, against background variables as number of living children, age, education and place of residence.

Table 5.1 Fertility preferences by number of living children

Percent distribution of currently married women aged 15-49 by desire for more children, according to number of living children.

Desire for more and certainty of preference	Number of living children*							
	0	1	2	3	4	5	6+	Total
Have another								
Definitely	92.4	77.9	22.3	5.5	1.9	1.3	0.4	30.3
Not sure	1.2	1.6	2.0	0.7	1.0	0.0	0.4	1.2
Undecided	3.1	5.1	7.4	2.1	2.0	0.8	0.7	4.1
Want no more								
Definitely	1.2	11.4	47.4	44.6	42.0	39.3	50.5	35.0
Not sure	1.0	2.0	4.0	1.8	0.6	0.3	0.7	2.1
Sterilized								
Regret, want more	1.2	0.8	3.7	4.0	2.0	1.3	0.7	2.5
Regret, no more	0.0	0.0	0.1	1.2	1.6	0.5	0.7	0.6
No regret	0.2	1.2	13.1	40.1	48.9	56.8	46.2	24.1
Total	100	100	100	100	100	100	100	100
Number of women	420	1380	1761	1408	802	387	277	6434

* Includes currently pregnant women

Mothers desire for more children in given in Table 5.1. About 30 percent say that they definitely want another child. The desire for additional children declines rapidly for those having more than two children. Thirtyfive percent of women have stated that they definitely do not want another child. The definite desire to limit family size around two children is evident by the fact that these proportions rise rapidly for women with two or more children.

Among all currently married women, 2.5 percent regret being sterilized and want more children. Another 0.6 percent regret being sterilized but are not sure whether they want more children. Overall, about 24 percent do not regret being sterilized. As expected, these proportions rise significantly for women with three or more living children.

Table 5.2 gives the proportion of mothers who want no more children as well as those who want more by status whether they want immediately or want to postpone. The data give an indication of the potential need for family planning services. About 38 percent of currently married women want no more children. These could be potential clients for permanent family planning methods. More than 18 percent of all currently married women who want a child after two or more years are potential clients for spacing methods. It is also clear from Table 5.2 that currently married women who want another child within two years are mostly low parity women.

Table 5.2 Desire for children

Percent distribution of currently married women aged 15-49 by desire for more children, according to number of living children.

Desire for more children	Number of living children*							Total
	0	1	2	3	4	5	6+	
Wants no more	2.0	14.1	52.9	47.2	42.9	39.7	51.4	37.9
Sterilized	1.5	2.0	17.0	45.2	52.5	58.9	47.4	27.2
Wants another within 2 years	80.7	20.2	8.0	2.3	1.3	0.2	0.2	12.5
Wants another after 2+ years	8.2	56.9	17.2	3.9	2.1	0.9	0.3	18.6
Wants another D.K. when	4.8	3.8	1.0	0.3	0.1	0.0	0.0	1.5
Unsure of preferences	2.9	2.9	3.9	1.0	1.2	0.3	0.7	2.3
Total	100	100	100	100	100	100	100	100
Number of women	420	1380	1761	1408	802	387	277	6434

* Includes currently pregnant women

Figure 5.1 - FERTILITY PREFERENCES AMONG ALL CURRENTLY MARRIED WOMEN AGED 15-49

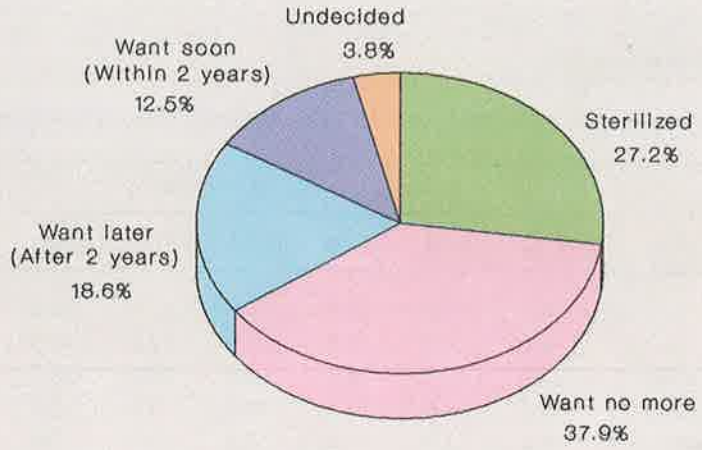
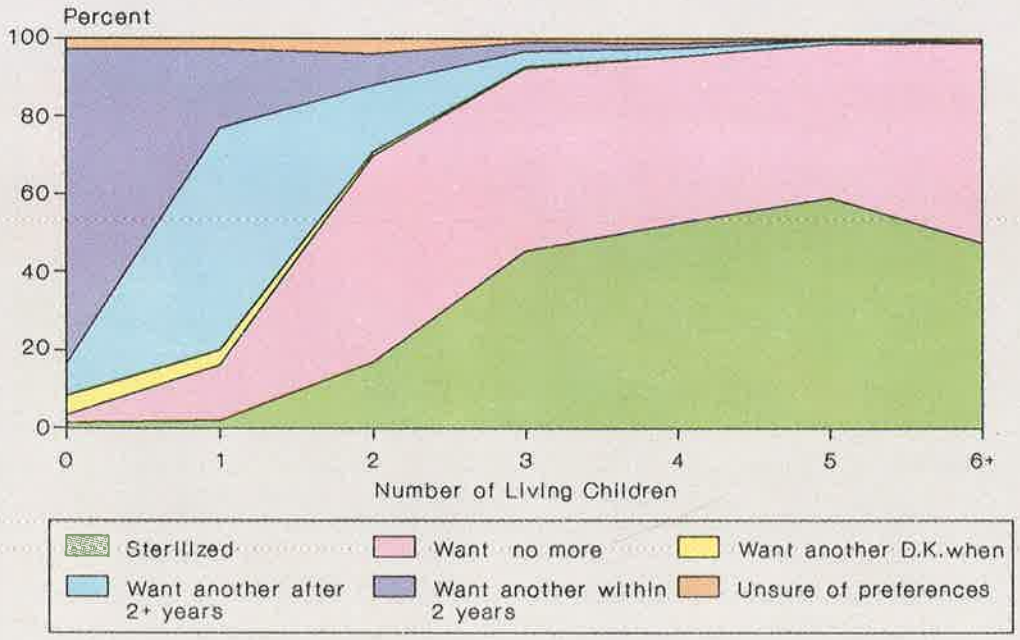


Figure 5.2 - FERTILITY PREFERENCES BY NUMBER OF LIVING CHILDREN AMONG CURRENTLY MARRIED WOMEN AGED 15-49



The desire for additional children by age of mother shows that there is a clear positive relationship between age and the proportion of women who want no more children and a negative relationship between age and the proportion of mothers who want another child (Table 5.3). These relationships are best seen in Figure 5.3.

Table 5.3 Fertility preferences by age

Percent distribution of currently married women aged 15-49 by desire for more children, according to age.

Desire for more children	Age of woman							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Wants no more	4.9	19.3	28.3	37.9	42.1	45.8	54.6	37.9
Sterilized	0.0	4.0	13.8	25.3	37.6	40.5	39.3	27.2
Wants another within 2 years	27.6	17.3	16.1	14.4	10.8	10.3	4.0	12.5
Wants another after 2+ years	60.7	54.0	37.2	18.0	5.6	1.4	0.0	18.6
Wants another D.K. when	4.2	2.8	2.5	1.3	1.3	0.6	0.4	1.5
Unsure of preferences	2.5	2.6	2.2	3.1	2.6	1.5	1.6	2.3
Total	100	100	100	100	100	100	100	100
Number of women	141	722	1101	1287	1173	1115	894	6434

Figure 5.3 - FERTILITY PREFERENCES BY AGE AMONG CURRENTLY MARRIED WOMEN

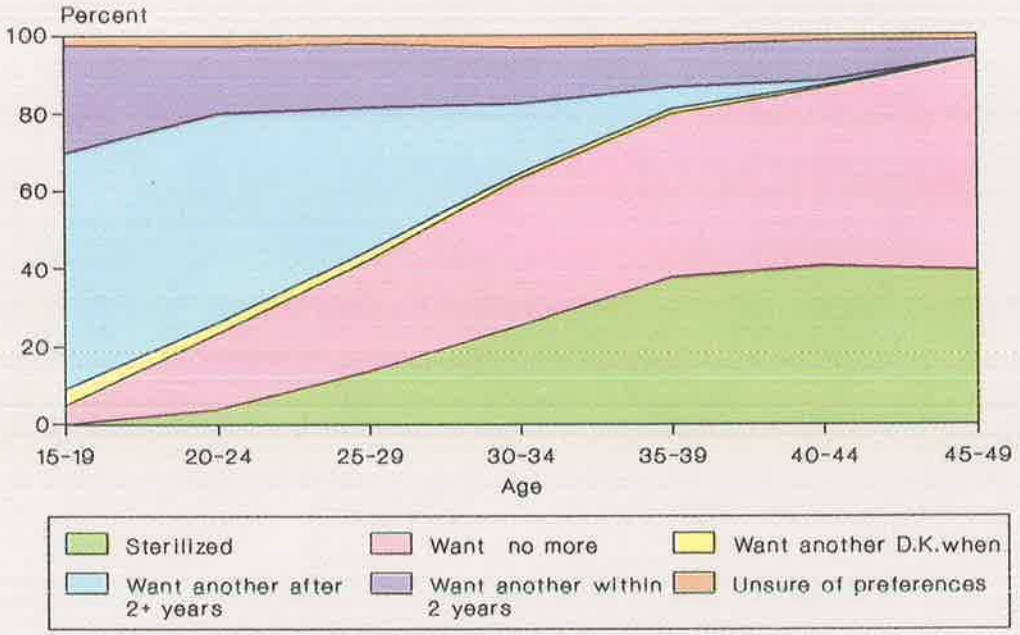


Table 5.4 examines the women who want no more children by selected background variables and number of living children. This includes sterilized women as well. The percentage who want no more children increases rapidly from 16 percent at parity one to, 70 percent at parity 2 and thereafter reaches a peak level of 97 percent at parity 4. When compared with 1987 figures, the data of the present survey shows a similar pattern with a slight increase in the values of percentages. This is true for all parity levels except one. This same pattern of increase could be observed at all levels with regard to background variables. Besides, there are no marked differentials within the categories of background characteristics.

Table 5.4 Preference for more children

Percentage of currently married women who want no more children (including sterilized women) by number of living children and selected background characteristics.

Background characteristic	Number of living children*					
	0	1	2	3	4+	Total
Sector						
Colombo metro	1.4	21.4	70.0	90.5	94.3	59.7
Other urban	5.5	18.9	70.7	91.8	96.6	63.8
Rural	3.9	14.2	69.5	92.8	97.0	65.6
Estate	1.8	29.1	75.5	91.9	98.8	72.9
Zone						
Zone 1	1.4	21.4	70.0	90.5	94.3	59.7
Zone 2	6.2	18.6	81.5	96.9	99.1	68.3
Zone 3	4.9	13.5	68.8	94.1	95.6	65.3
Zone 4	1.8	17.8	67.3	91.1	96.2	64.1
Zone 5	4.2	16.1	66.1	92.9	98.6	67.4
Zone 6	0.0	14.8	59.9	87.6	97.1	68.0
Zone 7	4.1	7.3	61.9	91.1	96.0	62.7
Education						
No education	1.9	27.7	73.1	89.8	98.4	76.6
Primary	7.8	19.1	67.6	93.6	96.2	76.5
Secondary	4.7	14.5	68.2	93.8	96.5	64.0
More than secondary	1.6	15.5	72.2	90.1	98.3	55.2
Total	3.5	16.2	69.9	92.4	96.9	65.1

* Includes currently pregnant women

5.3 Women in need of Family Planning

Table 5.5 examines the need for family planning services among currently married women. The women who fall into this category in need of family planning are those who are fecund, either want no more or want to postpone their next birth and also not contracepting. This includes also the women who are not immediately at risk of pregnancy and therefore, not immediately in need of contraception services. These are the women who are currently pregnant or not sexually active. Thus the data refers to women who are in need of family planning now or will be in need in the near future.

Table 5.5 Potential users of family planning

Among currently married women, the percent who are in need of family planning*, and the percent who are in need and plan to use a contraceptive method in the futurte, by background characteristics.

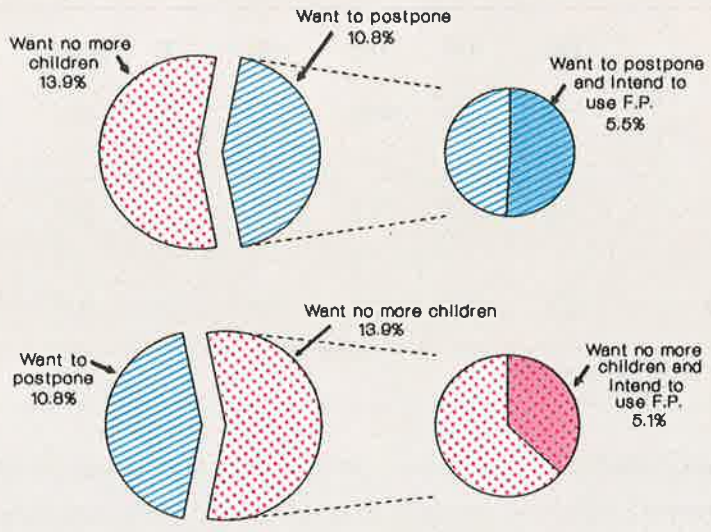
Background characteristic	In need of family planning			In need and intends to use contraception		
	Wants no more children	Wants to Postpone/ undecided**	Total in need	Wants no more children	Wants to postpone/ undecided**	Total in need
Sector						
Colombo metro	12.9	14.6	27.5	4.8	6.4	11.2
Other urban	16.3	13.3	29.7	4.9	5.6	10.5
Rural	12.5	9.7	22.2	4.8	5.4	10.1
Estate	32.1	14.4	46.5	10.6	5.3	15.9
Zone						
Zone 1	12.9	14.6	27.5	4.8	6.4	11.2
Zone 2	7.1	6.1	13.3	2.4	3.3	5.7
Zone 3	14.5	10.1	24.6	4.7	5.2	9.9
Zone 4	8.0	5.8	13.8	2.3	2.9	5.3
Zone 5	14.3	8.7	23.0	5.6	3.9	9.5
Zone 6	31.4	23.4	54.8	13.3	15.5	28.7
Zone 7	23.7	19.8	43.5	9.2	9.7	18.9
Education						
No education	26.8	11.3	38.0	7.8	3.2	11.1
Primary	18.7	9.8	28.5	6.0	4.7	10.6
Secondary	11.3	11.1	22.3	4.6	5.8	10.4
More than secondary	10.2	11.1	21.3	4.3	6.3	10.7
Total	13.9	10.8	24.7	5.1	5.5	10.6

* Women in need are defined as fecund, not currently contracepting and who want no more births or want to postpone next birth for at least two or more years.

** Includes undecided about whether to have another birth or about timing for the next birth.

As seen in Table 5.5 one fourth of currently married women are in need of family planning services. Out of this about 14 percent do not want any more children while nearly 11 percent want to postpone their next birth. But only about 11 percent have stated their willingness to use family planning: those who want to use family planning to stop child bearing (5.1 percent) and those who want to use it for birth spacing (5.5 percent). Compared with 1987 DHS it shows a slight increase in the need of family planning while the percentage intending to use family planning has decreased marginally.

Figure 5.4 - POTENTIAL USERS OF FAMILY PLANNING AND THEIR INTENTION



5.4 Ideal number of children

Table 5.6 gives information about the ideal number of children according to number of living children. It is seen that the mean ideal number of children desired is 2.8. This is a slight decrease from 3.1, reported in 1987. The mean ideal number of children is identical for ever married and currently married women by number of children. It is interesting to note that the mean ideal number of children for women with two living children is 2.5.

Table 5.6 Ideal number of children

Percent distribution of ever-married women by ideal number of children according to number of living children.

Ideal number of children	Number of living children*							All ever-married women
	0	1	2	3	4	5	6+	
0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1
1	5.8	7.7	1.3	1.1	0.8	0.1	0.3	2.7
2	60.6	63.2	57.5	20.8	20.7	13.3	6.5	41.3
3	23.5	21.9	27.6	54.5	24.2	33.1	22.4	31.6
4	3.5	2.9	7.7	13.8	35.6	18.4	19.6	12.4
5	0.5	0.6	2.0	4.6	9.4	20.9	15.4	4.9
6+	0.7	0.1	0.6	1.0	1.8	3.8	18.3	1.8
Non-numeric answer	4.7	3.5	3.3	4.1	7.6	10.4	17.6	5.2
Total	100	100	100	100	100	100	100	100
Number of women	455	1505	1891	1506	868	436	323	6983
Mean ideal number for ever-married	2.3	2.2	2.5	3.0	3.4	3.7	4.4	2.8
Mean ideal number for currently married	2.3	2.2	2.5	3.0	3.4	3.7	4.4	2.8

* Includes currently pregnant women

When the ideal number of children is examined by background variables as age, sector, zone and education, certain differentials could be seen. The highest mean ideal number is reported for estate sector and the lowest is for Colombo metro. Further, zone 6 and 7 give relatively higher means. It is also seen that there is an association between the mean ideal number and the educational level of women. Higher the educational level, lower is the mean ideal number (Table 5.7).

5.5 Fertility Planning and the status of birth

In this survey women were asked a series of questions to determine the status of pregnancy whether it was planned, unplanned, wanted at a later time or definitely unwanted. These questions were asked from women who had children in the preceeding five years including the currently pregnant women at the time of the survey. Although the purpose of these questions were to measure the degree to which couples successfully control their fertility, it has to be noted that this type of inquiries have limitations. To obtain accurate information it is necessary that the respondent recalls

Table 5.7 Mean ideal number of children

Mean ideal number of children for ever-married women by age and selected background characteristics.

Background characteristic	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Sector								
Colombo metro	2.7	2.3	2.4	2.5	2.6	2.7	3.1	2.6
Other urban	2.9	2.3	2.6	2.4	2.7	2.8	3.1	2.7
Rural	2.1	2.4	2.5	2.7	2.9	3.2	3.4	2.8
Estate	2.5	2.4	2.8	2.8	3.2	3.2	3.0	2.9
Zone								
Zone 1	2.7	2.3	2.4	2.5	2.6	2.7	3.1	2.6
Zone 2	2.5	2.2	2.3	2.4	2.6	2.8	2.9	2.5
Zone 3	2.1	2.3	2.3	2.5	2.9	3.0	3.1	2.7
Zone 4	2.0	2.3	2.6	2.6	2.8	3.2	3.3	2.8
Zone 5	2.3	2.5	2.7	2.8	3.0	3.1	3.5	2.9
Zone 6	2.2	2.6	2.9	3.2	3.3	3.5	4.0	3.2
Zone 7	2.2	2.6	2.8	3.0	3.3	3.6	3.8	3.1
Education								
No education	1.8	2.3	2.9	3.1	3.4	3.5	3.6	3.2
Primary	2.4	2.4	2.8	2.9	3.2	3.4	3.7	3.1
Secondary	2.2	2.5	2.5	2.7	2.8	3.0	3.1	2.7
More than secondary	2.3	2.2	2.3	2.4	2.7	2.8	2.9	2.6
Total	2.2	2.4	2.5	2.7	2.9	3.1	3.3	2.8

correctly her wishes during the last five years and report them accurately. There can be memory lapses and also the danger of rationalization since an unwanted pregnancy may well become a wanted birth.

Table 5.8 shows the percentage of all births in the past five years (including any current pregnancy) that occurred among women who were not using contraception during the interval and among those who were using contraception. A birth that falls into the category "wanted birth later" or "did not want birth" represents a contraceptive failure.

As seen in Table 5.8, among all 4154 births in the last five years, 70 percent were wanted then, 19 percent were wanted later and 10 percent were not wanted. It is mostly the women with 3 or more children who have reported unwanted births. It is also important to note that the percentage who have become pregnant while using a method is 11 percent.

Table 5.8 Planning status of births

Percent distribution of all births (including current pregnancy) in last five years by contraceptive practice of mother and whether birth was wanted, by birth order.

Contraceptive practice and desire for birth	Birth order*				Total
	1	2	3	4+	
Non contraceptive interval					
Wanted birth then	77.2	32.3	28.2	26.0	47.7
Wanted birth later	5.8	13.9	19.6	14.2	11.8
Did not want birth	0.8	2.5	9.6	22.3	6.0
Contraceptive interval					
Wanted birth then	13.1	36.0	25.7	16.5	22.6
Wanted birth later	2.7	12.0	9.1	6.8	7.2
Did not want birth	0.3	2.9	6.9	13.3	4.2
Desire not stated	0.1	0.3	1.0	0.9	0.5
Total	100	100	100	100	100
Number of births	1576	1262	670	647	4154

* Includes current pregnancy

Table 5.9 gives similar information for births that occurred during the last 12 months period prior to the survey. It is expected that since the information is on more recent past, the estimates would be more reliable. However, there is no significant difference in the estimates based on these two reference periods. Out of total births of 718 in the last 12 months 70 percent were wanted. 22 percent were wanted later and about 9 percent were not wanted. Similarly third or higher order births are more likely to be unwanted than first or second order births. However, the results on mistimed and unwanted pregnancies points the need for more extensive family planning service.

Table 5.9 Planning status of births in the last 12 months

Among women having a birth in the last 12 months, the percentage wanting a child then, later, or wanting no more children, by birth order.

Desire for last birth	Birth order of child		
	1-2	3+	Total
Wanted then	79.4	47.9	69.6
Wanted later	18.4	28.5	21.6
Not wanted	2.2	23.3	8.7
Not stated	0.0	0.3	0.1
Total	100	100	100
Number of births	495	223	718

Another indicator on desired fertility levels is the total wanted fertility rate. In calculating this, the unwanted births are excluded from the numerator. Thus the total wanted fertility rate could be expressed as the total number of births a woman would bear during her reproductive period if she experiences only the wanted age specific fertility rates. A comparison of total real fertility rate with the total wanted fertility rate would allow to assess the impact, if all unwanted births could be averted.

Information on total wanted fertility rates and real total fertility rates are given in Table 5.10. It shows that if unwanted births could be averted, the total fertility rate would drop from 2.3 to 1.8. This represent a difference of 21 percent. This difference between total wanted fertility rate and real total fertility rates is higher for rural and estate areas and implies the prevalence of unwanted fertility. It is also striking to note that the total wanted fertility rate is either below or very closer to replacement level.

Table 5.10 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the five years preceeding th survey, by selected background characteristics.

Background characteristic	Total wanted fertility rate	Total fertility rate
Sector		
Colombo metro	1.8	2.0
Other urban	2.1	2.4
Rural	1.8	2.3
Estate	2.0	2.6
Zone		
Zone 1	1.8	2.0
Zone 2	1.6	2.0
Zone 3	1.6	2.2
Zone 4	1.8	2.2
Zone 5	2.0	2.4
Zone 6	2.1	2.8
Zone 7	2.1	2.6
Total	1.8	2.3

CHAPTER 6

INFANT, CHILD MORTALITY AND MATERNAL AND CHILD HEALTH

H.R. Gunasekera and S. Ukwatta

This chapter examines infant and child mortality and indicators of maternal and child health. Estimates of infant and child mortality are useful tools for monitoring and evaluating health programs. These estimates also serve the purpose of identifying sectors of the population which are at high mortality risk. Infant mortality, in particular, is often used to reflect the state of public health, environment sanitation and in general socio-economic development of a country. Further, the health status of children and their mothers at the time of pregnancy have a crucial influence on population growth and the well being of the population. Information on the utilization of antenatal services, assistance at delivery, immunization coverage of children and the prevalence of common diseases helps health planners and program administrators to identify the population groups at high risk. Such knowledge is essential to evaluate the effect of on-going programs and make appropriate changes, if necessary, for improving the services.

This chapter presents the information on the levels, trends and differentials in infant and child mortality followed by maternal care and key indicators of child health such as immunization coverage and the treatment of diarrhoea.

6.1 Computation of Infant and Child Mortality

The mortality estimates presented in this chapter are derived from the information collected in the birth history section of the individual questionnaire. All the respondents were asked to provide information on each of the children she had given birth to including the name, sex, date of birth, whether the birth was single or multiple and survival status. If the child had died, the age at death was recorded. If the child was still living, information about his/her age at last birthday and whether the child lived with his/her mother was obtained. These data were used to calculate the following direct estimates of infant and child mortality for the five year periods (0-4, 5-9 and 10-14 years) preceding the survey.

Neonatal mortality (NN) : the probability of dying within the first month of life.

Postneonatal mortality (PNN) : the probability of dying after the first month of life but before exact age 1 year.

Infant mortality ($_1q_0$)	:	the probability of dying between birth and exact age 1 year.
Child mortality ($_1q_0$)	:	the probability of dying between exact age 1 and exact age 5.
Under-five mortality ($_1q_0$)	:	the probability of dying between birth and exact age 5.

Note that the mortality estimates are not rates, but are true probabilities, calculated according to the conventional life table approach. For any calendar period, deaths and exposure in that period are first tabulated for the age intervals 0, 1-2, 3-5, 6-11, 12-23, 24-35, 36-47 and 48-59 months. Then age interval specific probabilities of survival are calculated. Finally, probabilities of mortality for larger segments are produced by multiplying the relevant age interval survival probabilities together and subtracting the product from one; viz

$$_nq_x = 1 - \prod_{i=x}^{i=x+n} (1-q_i)$$

Where $_nq_x$ is the probability of dying between ages x and x+n and q_i's are the sub-internal probabilities of dying. A detailed description of the method for calculating the probabilities presented here is given in Rutstein (1984).

6.2 Assessment of Data Quality

The validity of the infant and child mortality rates derived from the birth history information are subject to both sampling and non-sampling errors. Among non-sampling errors the two major types of possible errors are the under reporting of the births and deaths and the inaccuracies of reporting dates of birth and ages at death. Since complete evaluation of the birth history information is beyond the scope of this chapter, this section describes the results of some basic checks for under reporting of early childhood deaths and misreporting age at death. The former would result in underestimates of mortality while the latter may distort the age pattern of under-five mortality.

It is well known that under reporting of deaths is generally more common for children who die shortly after birth than those who die later. Therefore, if the early neonatal deaths are selectively under reported, then it is expected to have abnormally low percentage of deaths under seven days compared to all neonatal deaths. Similarly, it is also expected to observe abnormally low percentage of neonatal to infant deaths. These percentages are shown in Table 6.1 and Table 6.2

for different time periods preceding the survey together with the distribution of reported deaths occurred under one month and under two years respectively.

Table 6.1 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days for five year periods of birth preceding the survey.

Age at death (days)	Years preceding survey			
	0-4	5-9	10-14	0-14
0	18	13	24	55
1	17	21	17	55
2	4	7	8	19
3	1	10	11	22
4	5	3	1	9
5	8	6	3	17
6	2	0	2	4
7	6	4	7	17
8	1	1	1	3
9	0	1	1	2
10	1	1	0	2
11	0	1	2	3
12	1	0	0	1
13	1	0	0	1
14	0	1	2	3
15	0	0	1	1
16	0	1	1	2
17	0	0	0	0
18	0	0	2	2
19	0	2	0	2
20	1	0	1	2
21	0	1	0	1
22	0	0	0	0
23	0	1	2	3
24	0	0	0	0
25	2	0	0	2
26	0	0	0	0
27	0	0	2	2
28	0	0	0	0
29	0	0	0	0
30	0	0	1	1
Total 0-30	68	74	89	231
Percent early neonatal[1]	80.9	81.1	74.1	78.4

[1] (0-6 days/ 0-30 days)*100

Table 6.2 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months for five year periods of birth preceding the survey.

Age at death (months)	Years preceding survey			
	0-4	5-9	10-14	0-14
0	68	74	89	231
1	4	4	5	13
2	8	4	4	16
3	3	4	5	12
4	3	2	2	7
5	1	0	4	5
6	2	2	7	11
7	2	4	4	10
8	0	3	3	6
9	2	1	2	5
10	2	1	2	5
11	0	2	3	5
12	3	8	7	18
13	0	0	0	0
14	0	0	3	3
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	2	4	6
19	0	0	0	0
20	2	0	0	2
21	0	0	0	0
22	0	2	0	2
23	0	0	0	0
Total 0-23	100	113	144	357
Percent neonatal[1]	72.0	73.2	68.5	70.9

[1] (Under 1 month/ under 1 year)*100

Table 6.1 reveals that the percentage of neonatal deaths reported to have occurred during the first week of life (0-6 days) remain high around 81 percent during 0-4 and 5-9 years preceding the survey and drops to 74 percent for the period 10-14 years preceding the survey. This gives no indication of under reporting of deaths in the early neonatal period during (0-4) and (5-9) years preceding the survey; but it suggests a possibility of some omission of deaths in the early neonatal period during the earliest time period. Omissions of deaths in the distant past is a common phenomena observed in the surveys of this nature due to the recall lapses of respondents.

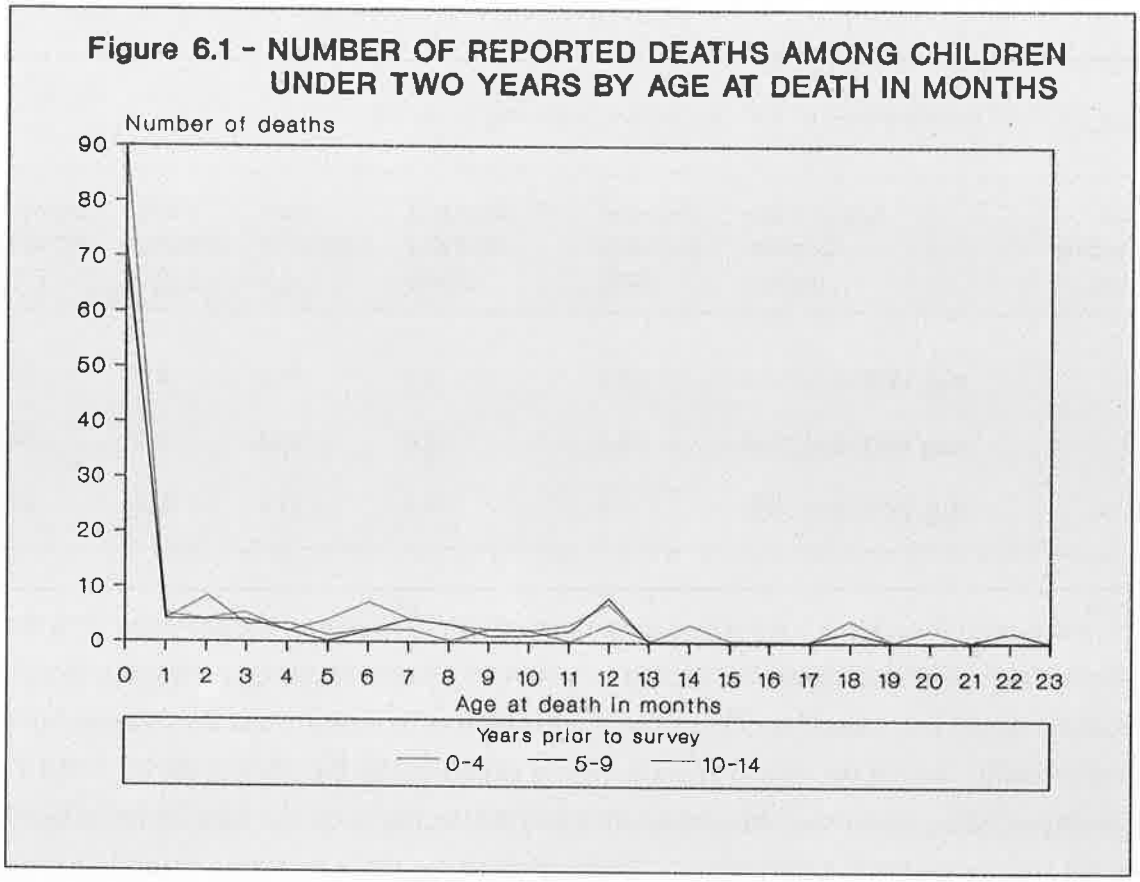
The lower panel of Table 6.2 gives the percent of neonatal deaths. Here too, no evidence of under reporting of deaths is seen for (0-4) and (5-9) years preceding the survey; but indicates a possibility of some omission of deaths in the neonatal period during 10-14 years preceding the survey.

A common source of error in most retrospective surveys is a tendency for mothers to report the age at death of their children as occurring at multiples of six months, eg. 6, 12 and 18 months. This heaping of age at death introduces biases in rate calculations, if the net result is to shift deaths from one age segment to another. In particular, heaping at 12 months causes concern since a certain fraction of these deaths, though reported to occur after infancy (ie at age segment 12-23 months), may have actually occurred during infancy (ie at age segment 0-11 months). The infant mortality rate ($_1q_0$), in this case, is biased downwards and child mortality ($_4q_1$) upwards. However a simulation study using DHS data indicates that the magnitude of misreporting would bias the mortality estimates by no more than 5 percent. (Sullivan et.al. 1990). To minimize this type of error, interviewers were instructed to record deaths under one month of age in days, and under 2 years of age in months. In addition, there were instructions to interviewers to probe for an exact age at death in months when the age at death was reported as one year, or 12 months.

Table 6.2 shows the distribution of reported deaths under two years of age for three five-year periods preceding the survey. This is schematically shown in Figure 6.1.

Although no heaping exists at 6 months in the recent periods, some heaping is visible at 12 months. But its effect on the rates is not so serious. For instance, even if as many as half of the deaths reported at 12 months were reassigned to the infant age segment, infant mortality would be increased and child mortality would be decreased by about 1 percent for the period 0-4 years preceding the survey.

The above discussion reveals that the under reporting of neonatal deaths is negligible in the recent past, but indicates the possibility of some omissions in the distant past. Its probable effect will be to underestimate slightly the rates of infant mortality for 10-14 years preceding the survey.



Further the heaping of ages at death at 12 months may introduce a slight downward bias in the estimation of infant mortality and an upward bias in the estimation of child mortality. This effect too appears to be negligible.

So it can be concluded based on the internal consistency checks that the mortality data collected are of reasonable quality.

6.3 Levels and Trends in Infant and Child Mortality

Estimates of infant and child mortality rates for three consecutive five-year periods are shown in Table 6.3. The infant mortality rate ($_1q_0$) for the most recent period (viz. 0-4 years preceding the survey) is 25.3 per 1000 live births. The child mortality ($_4q_1$) and under-five mortality ($_5q_0$) rates remain at 4.0 and 29.5 per 1000 live births respectively during the same period. These levels of infant and child mortality are very low compared with most other developing countries. Table 6.3 also reveals that over the past 15 years infant mortality ($_1q_0$) declined by 19 percent whereas the child mortality ($_4q_1$) and under-five mortality ($_5q_0$) declined by 62 percent and 29 percent respectively. It is important to observe that between (5-9) and (0-4) years preceding the

Table 6.3 Infant and child mortality

Infant and child mortality rates by five-year periods preceding the survey

Years preceding survey	Approximate calendar periods	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under five mortality ($_5q_0$)
0-4	Aug 1988-Aug 1993	18.2	7.1	25.3	4.0	29.5
5-9	Aug 1983-Aug 1988	18.8	6.6	25.4	9.1	34.6
10-14	Aug 1978-Aug 1983	21.6	9.8	31.4	10.4	41.5

survey infant mortality doesn't show any significant declines unlike in the previous periods; but child mortality recorded a substantial decline of about 56 percent resulting a moderate decline of 15 percent in under-five mortality. Therefore, the survey results indicate that the estimated decline in infant mortality during the last 15 years is almost explained by the decline during (10-14) and (5-9) years preceding the survey. In contrast, much of the decline in child mortality has taken place during the two most recent time periods. Thus although the child mortality reach low levels in recent times, there exists considerable scope for further improving child survival during infancy in Sri Lanka.

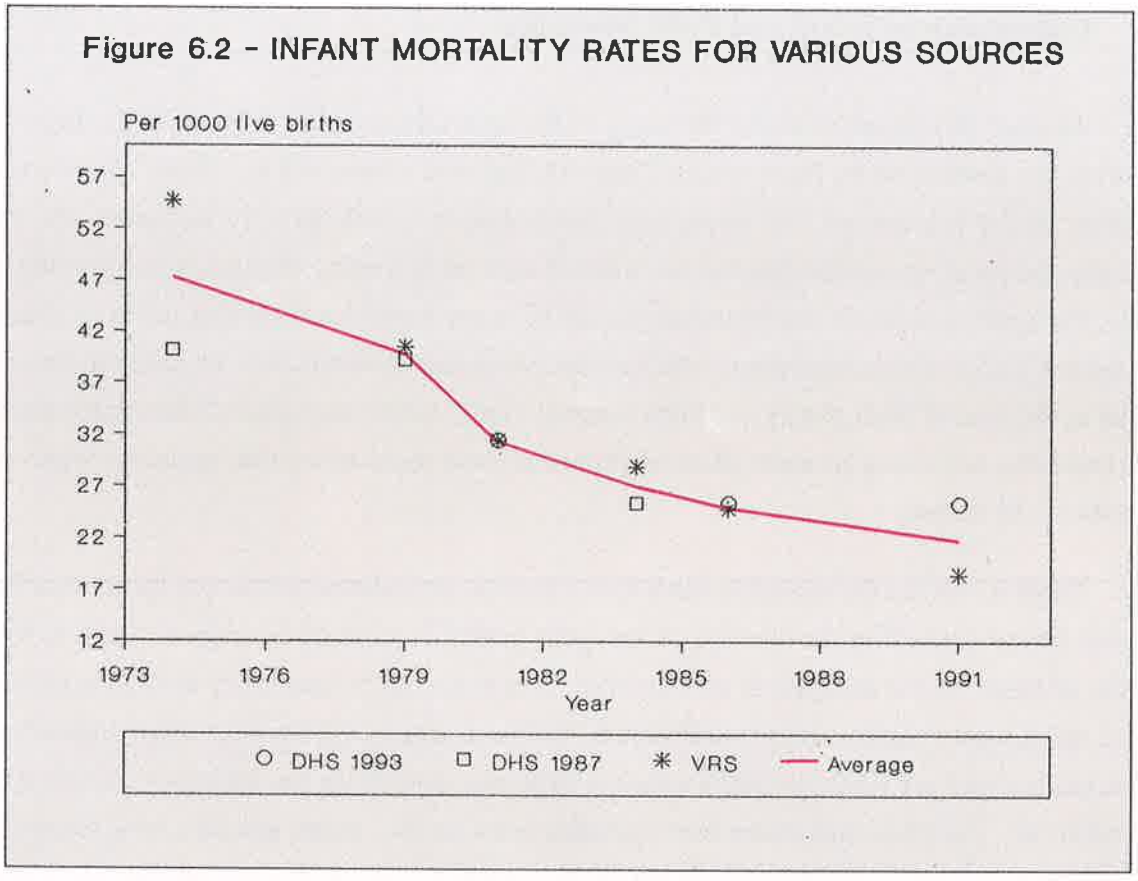
Table 6.4 Trend in infant mortality rate

Infant mortality rates from various sources

Approximate midpoint	DHS 1993	DHS 1987	Vital Registration system (VRS)(1)
1991	25.3		18.5*
1986	25.4		24.8
1984	-	25.4	28.9
1981	31.4	-	31.4
1979	-	39.2	40.5
1974	-	40.1	54.7

*Provisional; (1) Excluding northern and eastern provinces

Table 6.4 and Figure 6.2 show direct measures of infant mortality from DHS 93, DHS 87 and Vital Registration System (VRS). This information is useful to compare the infant mortality rates from various sources and helps to identify the trends. It should be noted that the rates for VRS have been recalculated excluding northern and eastern provinces, to make it comparable with survey results.



Comparison of the three sources indicates that only minor differences exist between 1979 and 1986. Between this period infant mortality estimates obtained from DHS93 are either equal or only slightly higher than the value recorded in VRS. Further the values for 1984 from DHS87 and the value for 1986 from DHS93 are broadly comparable. Fairly large differences are visible in 1974 and in the most recent year 1991. In 1974, infant mortality figure is higher in VRS than DHS87. This is due to the fact the DHS87 under estimated infant deaths in the furthest period. (Department of Census and Statistics, 1988). In 1991, on the other hand, the value of infant mortality from DHS93 (25.3) is significantly higher than the corresponding figure from VRS (18.5). This would suggest that either DHS93 over estimates infant mortality or there is severe under registration of infant deaths in the VRS in recent times. As discussed above the mortality figures from DHS93 for previous periods are broadly comparable with other sources; there is no firm evidence to suspect about the value for the most recent period. However a more detailed assessment is necessary before arriving at a definite conclusion.

6.4 Differentials in Infant and Child Mortality

An analytical framework for the study of the determinants of child survival in developing countries has developed by Mosley and Chen (Mosley and Chen, 1984). There are two sets of variables in the framework viz. proximate determinants which directly influence the infant mortality and socio-economic determinants which operate indirectly through proximate determinants. The socio-economic determinants consist of many variables including place of residence and mother's educational attainment whereas the proximate determinants include the age of the mother at the time of birth, parity and birth interval. This section discusses differential infant and child mortality according to some selected proximate and socio-economic variables which were included in the survey.

Table 6.5 shows the mortality rates by socio-economic characteristics of the mother for the ten-year period preceding the survey. A ten-year period is selected in order to yield sufficient number of cases for the analysis of differentials. It is seen that the mortality levels are highest in estates and lowest in urban areas (see Figure 6.3). For example, the ten year infant mortality rate for the estates is 61 per 1000 live births which is more than double the rate of 24 per 1000 live births in rural areas. The child and under five mortality rates for the estates are also very much higher than in other sectors. A similar pattern was seen in DHS87 for 1977-1987 period; but mortality levels are higher for estates in DHS93 compared to DHS87. However, caution should be exercised in interpreting the estate mortality rates as those are based on less than 500 cases. By socio-economic zones, infant and under-five mortality levels are highest in zone 5 where many of the estates are located. By education, there is a very clear monotonic decline in mortality as education increases. The infant mortality rate among children born to mothers with no education (45 per 1000 live births) is nearly two and a half times higher than the rate among children born to mothers with more than secondary education (see Figure 6.3). Similarly, child and under five mortality rates of children born to mothers with no education are seven and three times higher than the corresponding rates of children born to mothers with more than secondary education.

Table 6.5 Infant and child mortality by background characteristics

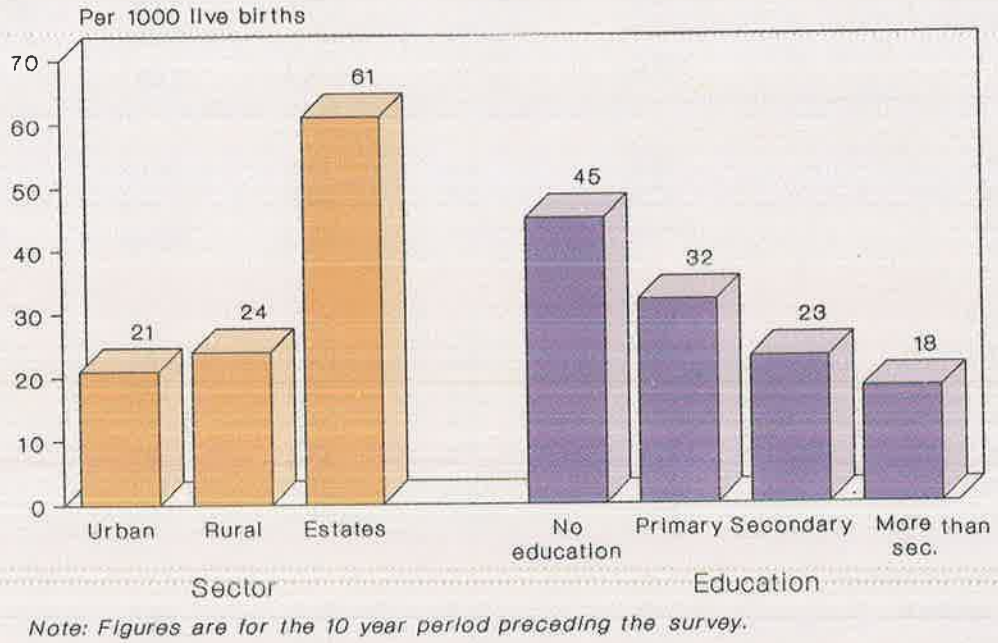
Infant and child mortality rates for the ten-year period preceding the survey by selected background characteristics

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under five mortality ($_5q_0$)
Sector					
Urban	14.6	6.2	20.8	5.5	26.2
Rural	17.5	6.5	24.0	5.8	29.7
Estate	(42.0)	(18.6)	(60.6)	(25.3)	(84.4)
Zone					
Zone 1	14.7	6.7	21.4	7.8	29.1
Zone 2	14.6	6.4	21.0	0.9	21.9
Zone 3	23.2	2.6	25.8	9.2	34.8
Zone 4	15.9	6.9	22.8	6.9	29.5
Zone 5	25.6	9.6	35.2	9.1	44.0
Zone 6	17.7	3.5	21.2	11.2	32.2
Zone 7	12.4	11.1	23.5	3.4	26.8
Education of mother					
No education	29.9	14.8	44.7	18.0	61.8
Primary	21.6	10.7	32.3	10.4	42.3
Secondary	17.6	5.1	22.7	4.7	27.3
More than secondary	13.5	4.5	18.0	2.4	20.4
Total	18.4	6.9	25.3	6.8	32.0

Note: Appropriate calender period covered is July 1983 through July 1993
Figures within parantheses are based on 250-499 exposed persons.

Table 6.6 presents mortality differentials by selected demographic characteristics, which are supposed to be influencing the survival chances of children. As expected, mortality is higher for males than females. For example, male infant mortality rate is 54 percent higher than the corresponding rate for females. The variation of infant mortality with the mother's age at birth also follow the expected pattern. Mortality is highest (viz 32.9 per 1000 live births) for children of young mothers under the age of 20; it falls for births to mothers age 20-34; then it marginally rises again for births to women 35 and older. The same pattern is observed for neonatal mortality too. This same U-shaped pattern is apparent in the relationship between birth order and infant mortality. The variations of mortality with the previous birth interval indicate the usual expected pattern of high mortality among children born less than two years after the previous birth. This is true for all mortality rates although the difference is marginal in the case of neonatal mortality. The survival

Figure 6.3 - INFANT MORTALITY RATES BY BACKGROUND CHARACTERISTICS



Note: Figures are for the 10 year period preceding the survey.

chances of children increase as the previous birth interval increases except minor deviations in postneonatal and child mortality.

6.5 Maternal Care Indicators

Provision of medical care such as prenatal care, tetanus immunization and assistance at delivery by a trained medical practitioner are essential for infant and child survival and safe motherhood. To measure the level of care received, mothers of all children born during the five years preceding the survey were asked the questions "Did the family health worker visit you when you were pregnant with (name)?" and "Did you visit a doctor or a clinic during pregnancy for a check up?". They were also asked whether they received tetanus injection during pregnancy and if they did, how many such injections were received. Again these women were asked the place of birth of the child and the assistance given during delivery. This information was collected from the women for each child born during the five year period preceding the survey.

Table 6.6 Infant and child mortality by demographic characteristics

Infant and child mortality rates for the ten-year period preceding the survey by selected demographic characteristics

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under five mortality ($_5q_0$)
Sex of child					
Male	21.9	8.9	30.8	7.8	38.4
Female	14.9	5.1	20.0	6.8	26.7
Mother's age at birth					
<20	26.5	6.4	32.9	5.2	38.0
20-29	19.0	7.4	26.4	6.6	32.8
30-34	15.4	7.1	22.5	9.2	31.5
35+	17.3	6.4	23.4	8.0	31.4
Birth order					
1	24.9	4.8	29.7	2.8	32.4
2-3	13.0	7.8	20.8	9.3	30.0
4-6	19.6	10.0	29.6	7.3	36.8
7+	*	*	*	*	*
Previous birth interval(1)					
<2 yrs	16.4	10.3	26.7	14.1	40.4
2-3 yrs	15.5	5.9	21.4	6.4	27.7
4 years or more	9.3	6.5	15.8	7.4	23.1
Total	18.4	6.9	25.3	6.8	32.0

Note: Approxriate calendar period covered is July 1983 through July 1993
* Less than 250 exposed cases.
(1) Based on birth of order two and higher.

6.5.1 Prenatal Care

Prenatal care is defined as pregnancy related health care provided by a doctor in a hospital or a clinic, family health worker, others or a clinical checkup. It is significant that almost all mothers (99.6 percent) who had births in the five years preceding the survey received prenatal care as shown in Table 6.7. This proportion was 96.5 percent at the 1987 survey. For 80 percent of the births, prenatal care was provided by a doctor and a midwife, nearly one fifth (18.6 percent) was served by a doctor alone, and a very insignificant proportion (0.8 percent) received care from a midwife only.

Table 6.7 Prenatal care received

Distribution of births in the last 5 years* by type of prenatal care received by mother by background characterisics

Background characteristic	Type of prenatal care received				Total	Number of births
	Doctor only	Midwife only	Doctor and midwife	No care		
Mother's age at birth						
<20	16.9	1.2	81.8	0.1	100	251
20-34	18.4	0.7	80.5	0.4	100	2874
35+	20.6	1.2	77.4	0.9	100	533
Birth order						
1	19.2	0.6	80.0	0.3	100	1361
2-3	18.2	1.0	80.4	0.5	100	1681
4-5	17.7	0.2	81.7	0.3	100	496
6+	22.4	3.0	72.8	1.7	100	119
Sector						
Colombo metro	33.5	0.2	66.1	0.2	100	419
Other urban	31.6	0.6	67.8	0.0	100	283
Rural	13.0	0.9	85.6	0.5	100	2751
Estate	46.2	0.8	52.6	0.4	100	205
Zone						
Zone 1	33.5	0.2	66.1	0.2	100	419
Zone 2	17.2	0.8	81.7	0.3	100	532
Zone 3	12.1	1.3	86.6	0.0	100	508
Zone 4	12.3	0.4	87.2	0.0	100	743
Zone 5	22.1	0.6	76.2	1.1	100	749
Zone 6	15.0	2.3	82.3	0.4	100	265
Zone 7	20.5	0.5	78.0	1.0	100	441
Education of mother						
No education	31.3	2.5	65.9	0.3	100	265
Primary	22.0	0.7	76.4	0.8	100	810
Secondary	13.1	0.7	85.7	0.4	100	1431
More than secondary	20.1	0.5	79.2	0.2	100	1152
Total	18.6 (33.3)	0.8 (1.6)	80.2 (61.6)	0.4 (3.4)	100 (100)	3657 (3906)

Note: * Includes births in the period 1-59 months prior to the survey.
Figures within parantheses are from DHS87.

Among the background characteristics, and within each characteristic, similar pattern of prenatal care can be seen. Percentage of mothers who receive prenatal care by a doctor alone increase when the mother's age at birth increases. On the other hand, provision of prenatal care

by a doctor and midwife decreases when the age of the mother increases. A similar pattern can be seen when the birth order is considered. About 46 percent of the births that occurred to mothers in the estate sector during the five years preceding the survey received prenatal care by a doctor only. This is probably related to the greater availability of estate managed clinics or easy access to those clinics in the estate areas. More births occurred to women in each sector (Colombo metro 66.1 percent, other urban 67.8 percent, rural 85.6 percent and estate 52.6 percent) receive prenatal care from a doctor and a midwife and very small proportions of each sector received care from a midwife alone. No significant differences can be seen among zones except zone 1, zone 5 and zone 7 where the provision of prenatal care by the doctor alone is more than 20 percent. With regard to education, woman with no education is more likely to rely on a doctor alone than women with an education.

6.5.2 Tetanus Immunization for Pregnant Women

Neonatal tetanus is a major cause of neonatal mortality in many countries. Two doses of tetanus toxoid are recommended for mothers during the first pregnancy to prevent Tetanus neonatorum. Tetanus Toxoid first dose (TT1) has to be given after 12 weeks of pregnancy and the second dose (TT2) has to be given 6-8 weeks after TT1. One dose should be administered during every subsequent pregnancy up to a maximum of five doses in all (i.e. TT1 - TT5). In this survey, women were asked about the tetanus injection they received (whether they received 1 dose or 2 doses) for all births (alive or dead) during the pregnancy in the 5 years preceding the survey. The respondents recall is used as the source of information on vaccination status. It is important to note that women may not recall accurately whether they had the particular injection or not. As a result, the proportion of births which are fully protected against tetanus may be under estimated. On the other hand, women may incorrectly report other types of injections as tetanus injection which would cause the level of coverage to be overestimated.

In order to minimize these recall lapses, Table 6.8 restricts information related to births occurred during the 12 months preceding the survey whose mothers received injections to avoid over estimation and under estimation to some extent. Among them, 64.7 percent received two doses. Another 29.2 percent received one dose only and 5.6 percent received none. This indicates fairly good coverage of women by health service system in Sri Lanka. Percentage receiving one dose shows a substantial increase since 1987 (16.6 percent in 1987 and 29.2 percent in 1993), but the percentage receiving two doses has decreased from 66 percent in 1987 to 64.7 percent in 1993. It is likely that at least some of these mothers were protected by two doses during an earlier pregnancy and the one injection for the most recent pregnancy represents a booster shot.

Table 6.8 Tetanus toxoid injections

Percent distribution of births in the 12 months preceeding the survey whose mothers received tetanus toxoid injections by selected background characteristics.

Background characteristic	Number of tetanus toxoid injections				Total	Number of births
	None	One dose	Two doses	Don't know/ Missing		
Mother's age at birth						
<20	6.5	17.2	76.3	0.0	100	44
20-34	5.7	30.0	63.7	0.6	100	589
35+	5.0	29.5	65.4	0.0	100	121
Birth order						
1	1.7	4.9	92.8	0.6	100	287
2-3	7.9	44.6	46.9	0.5	100	349
4-5	6.1	43.2	50.6	0.0	100	98
6+	18.6	38.2	43.3	0.0	100	20
Sector						
Colombo metro	7.5	23.4	69.2	0.0	100	84
Other urban	5.3	26.7	65.7	2.3	100	72
Rural	5.0	31.5	63.3	0.3	100	564
Estate	12.7	11.1	76.3	0.0	100	34
Zone						
Zone 1	7.5	23.4	69.2	0.0	100	84
Zone 2	1.3	22.4	76.3	0.0	100	112
Zone 3	5.6	37.0	57.3	0.0	100	101
Zone 4	4.5	31.8	62.5	1.1	100	147
Zone 5	5.6	29.3	64.2	1.0	100	164
Zone 6	8.2	36.8	55.0	0.0	100	60
Zone 7	9.6	24.6	65.8	0.0	100	87
Education of mother						
No education	7.8	22.6	69.5	0.0	100	48
Primary	5.6	38.7	54.4	1.2	100	138
Secondary	6.2	30.2	63.6	0.0	100	301
More than secondary	4.6	24.3	70.5	0.6	100	268
Total	5.6	29.2	64.7	0.4	100	755

Mothers of age more than 35 years who received two doses are lower than the mothers of young age groups. Percentage of mothers of higher birth order who received 2 doses are also significantly lower (43.3 percent) than the mothers of first order births (92.8 percent). Another significant feature is that 18.6 percent of the mothers with 6 or more children did not receive any of these injections for births occurred during the one year period preceding the survey. This

proportion is very low (1.7 percent) for women with one birth. Among sectors, mothers who received only one dose is lowest (11.1 percent) in estate sector, but estate women record the highest proportion (76.3 percent) when two doses are considered. Among zones the percentage of women who received two doses is highest in zone 2. With regard to education, the highest proportion (70.5 percent) who received two doses are mothers with more than secondary education and the lowest proportion (22.6 percent) who received one dose are women with no education.

6.5.3 Place of Delivery

Eighty seven percent of the births that occurred during the five years preceding the survey took place at a government hospital or a maternity home as shown in Table 6.9. Deliveries that took place at a private nursing home and at home are very insignificant compared with the deliveries at a government institution.

Births to mothers under age 20 are more likely to be delivered at a government hospital or a maternity home than those to mothers of age 20 and above. For 10.5 percent of the mothers with 4 - 5 births and 18.5 percent with 6 or more births, place of delivery was at home. It is possible that most of these mothers who delivered at home are in estate sector as the home deliveries among estate women are high (29.8 percent). Seventeen percent of the mothers in Colombo metro and 32.2 percent in other urban areas are more likely to deliver births in private nursing homes than in other areas. More than 80 percent of births to mothers in each zone were delivered at a govt. hospital or a maternity home and another 17 percent in zone 1 which consisted of Colombo metro and Gampaha urban were delivered at a private nursing home. About one fifth of births to mothers without any education were delivered at home. Home deliveries declined to 1.5 percent among those with more than secondary education. More than 90 percent of the deliveries have occured at a government place for mothers with secondary education and relatively high proportion of 13.7 percent of the births to mothers with more than secondary education were delivered at a private nursing home.

6.5.4 Assistance During Delivery

In this survey, all respondents were asked about the persons who assisted at the delivery. If the respondent mentioned more than one attendant, only the most qualified attendant was recorded. Table 6.10 shows information on assistance at delivery.

Table 6.9 Place of delivery

Percent Distribution of births in the 5 years* preceeding the survey by place of delivery by selected background characterisics

Background characteristic	Place of delivery				Total	Number of births
	Govt. hospital/ maternity home	Private nursing home	At home	Other		
Mother's age at birth						
<20	90.2	3.4	6.4	0.0	100	251
20-34	86.7	7.0	6.0	0.3	100	2874
35+	89.1	5.2	5.7	0.0	100	533
Birth order						
1	89.5	7.5	2.6	0.5	100	1361
2-3	86.4	7.0	6.5	0.1	100	1681
4-5	86.8	2.7	10.5	0.0	100	496
6+	77.5	4.0	18.5	0.0	100	119
Sector						
Colombo metro	81.3	17.0	0.8	0.9	100	419
Other urban	66.6	32.2	1.2	0.0	100	283
Rural	91.6	2.8	5.4	0.2	100	2751
Estate	70.0	0.3	29.8	0.0	100	205
Zone						
Zone 1	81.3	17.0	0.8	0.9	100	419
Zone 2	93.1	6.1	0.8	0.0	100	532
Zone 3	91.5	4.5	3.8	0.2	100	508
Zone 4	90.4	5.1	4.0	0.4	100	743
Zone 5	83.3	5.9	10.8	0.0	100	749
Zone 6	90.3	2.7	7.0	0.0	100	265
Zone 7	81.0	5.2	13.8	0.0	100	441
Education of mother						
No education	76.2	2.5	21.3	0.0	100	265
Primary	86.9	2.3	10.5	0.2	100	810
Secondary	91.9	3.9	4.1	0.1	100	1431
More than secondary	84.4	13.7	1.5	0.4	100	1152
Total	87.3	6.5	6.0	0.2	100	3657

* Include births in the period 1-59 months prior the survey.

Table 6.10 Assistance during delivery

Percent Distribution of births in the 5 years* prior to the survey by type of assistance mother received during delivery by selected background characterisics

Background characteristic	Attendant assisting during delivery**						Total	Number of births
	Doctor	Govt. Nurse/ Family health worker	Traditional birth attendant	Relative/ Neighbour	Other	No one		
Mother's age at birth								
<20	18.7	74.5	4.0	2.4	0.3	0.0	100	251
20-34	23.7	70.5	3.6	2.0	0.2	0.1	100	2874
35+	26.1	68.5	3.0	1.9	0.3	0.3	100	533
Birth order								
1	29.6	67.1	2.0	1.1	0.2	0.0	100	1361
2-3	22.1	71.8	3.9	1.9	0.1	0.2	100	1681
4-5	15.4	75.8	5.2	3.5	0.2	0.0	100	496
6+	13.7	67.4	10.5	7.8	0.6	0.0	100	119
Sector								
Colombo metro	42.7	56.3	0.2	0.9	0.0	0.0	100	419
Other urban	50.3	49.1	0.6	0.0	0.0	0.0	100	283
Rural	17.4	77.2	3.4	1.6	0.2	0.1	100	2751
Estate	32.2	38.1	16.6	13.0	0.1	0.0	100	205
Zone								
Zone 1	42.7	56.3	0.2	0.9	0.0	0.0	100	419
Zone 2	23.8	74.8	0.8	0.3	0.0	0.3	100	532
Zone 3	22.6	75.2	1.3	0.9	0.0	0.0	100	508
Zone 4	21.6	74.6	2.5	1.3	0.0	0.0	100	743
Zone 5	26.1	62.2	7.6	3.7	0.2	0.2	100	749
Zone 6	13.3	79.8	3.2	3.1	0.6	0.0	100	265
Zone 7	12.3	74.4	8.0	4.4	0.8	0.0	100	441
Education of mother								
No education	18.9	60.3	9.0	11.0	0.8	0.0	100	265
Primary	16.0	73.9	6.7	3.4	0.0	0.0	100	810
Secondary	18.5	77.3	2.8	1.0	0.3	0.1	100	1431
More than secondary	36.6	61.8	1.1	0.4	0.0	0.1	100	1152
Total	23.7	70.4	3.6	2.0	0.2	0.1	100	3657

* Includes births in the period 1-59 months prior to the survey.

** If the respondent mentioned more than one attendant, only the most qualified attendant is considered.

Given the high proportions of women who received prenatal care from a trained medical practitioner and tetanus toxoid injections, it is not surprising that equally high proportions of all births in the last five years were assisted by a trained medical person, either a doctor or a nurse or a family health worker. Government nurses/family health workers are found to have a very important role in delivery assistance. Seventy percent of births were assisted by them while only 24 percent were assisted by doctors, 4 percent by traditional birth attendants and another 2 percent by others. This is common for each background characteristic except for other urban areas. Deliveries among women more than 35 years are most likely to be assisted by a doctor than the women below 35 years of age. It is interesting to note that 10.5 percent of births occurring to mothers with 6 or more children and 16.6 percent of the births occurring to mothers in estate areas were assisted by a traditional birth attendant. On the other hand, only 1 percent of the births were assisted by traditional birth attendant whose mothers are with more than secondary education.

6.6 Child Care Indicators

The survey included some questions on indicators of health care. The information collected focused on immunization coverage, prevalence and treatment of diarrhoea among children under 5 years of age.

6.6.1 Immunization of Children

WHO's Expanded Programme on Immunization (EPI) recommends that between the first and the nineth month of life, children should be immunized against the six preventable childhood diseases: a BCG vaccination for tuberculosis, three doses of DPT vaccine for the prevention of diphtheria, pertussis (whooping cough) and tetanus, three doses of polio vaccine and one dose of measles vaccine. In Sri Lanka, a national immunization programme began in 1961 but was expanded significantly by the EPI effort which started in 1978. Vaccination of measles was introduced in 1978 but did not achieve countrywide coverage until 1985. In addition to the 3 doses of DPT and Polio vaccines, a fourth dose was introduced after 1987.

Vaccinations received by infants and children are usually recorded on a health card which is given to the parents for each child at the time of first vaccination. The availability of health cards was inquired from all the respondents who have children under five years of age. If the mother could show the interviewer the card, the dates of all immunizations received were recorded, therefore the immunization coverage applies only to children who had health cards for the tabulations on immunization given in this section. Vaccination coverage is presented in Table 6.11.

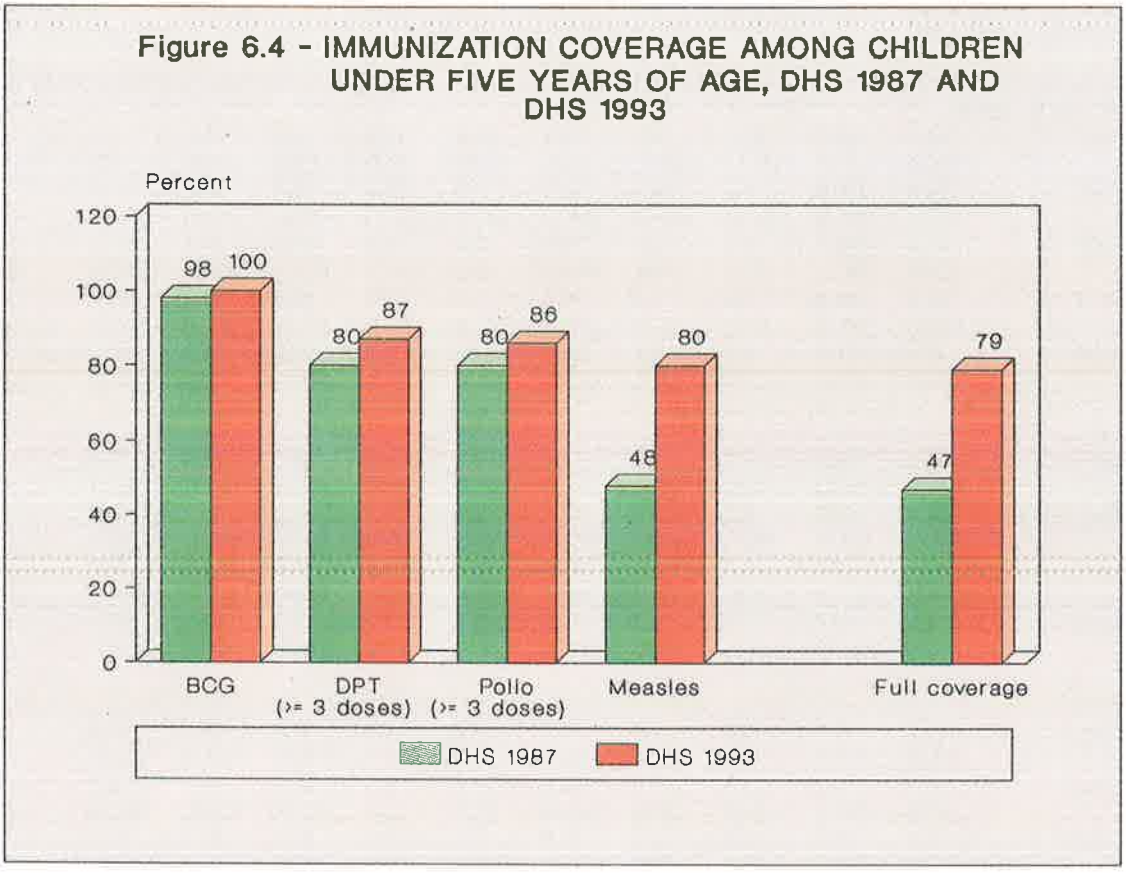
Table 6.11 Vaccinations of children under 5 years of age

Percentage of children under 5 years of age[1] with a health card seen by the interviewer, and among children with a health card seen percent who have received specific immunizations and percent who are fully immunized by background characteristics

Background characteristic	Percentage with a card	Percent immunized with									Number of children with health cards
		BCG	DPT			Polio			Measles	Full coverage	
			1	2	3+4	1	2	3+4			
Child's age in months											
01-05	87.7	100.0	32.1	9.6	0.4	31.9	10.0	0.0	0.0	-	284
	(78.5)	(97.0)	(33.3)	(7.8)	(0.0)	(32.3)	(7.8)	(0.0)	(0.0)	(-)	(290)
06-11	86.4	100.0	4.3	24.2	71.2	4.3	24.9	70.5	25.6	25.6	349
	(87.1)	(99.5)	(10.6)	(31.8)	(55.3)	(10.4)	(31.5)	(55.0)	(22.4)	(22.4)	(320)
12-23	84.6	100.0	0.2	0.6	99.3	0.2	0.6	99.3	95.5	95.0	653
	(82.1)	(99.1)	(2.1)	(4.0)	(93.4)	(1.9)	(4.3)	(93.1)	(68.5)	(67.3)	(636)
24-35	81.6	100.0	0.0	0.2	99.0	0.3	0.2	98.6	97.5	95.9	566
	(78.6)	(98.2)	(1.3)	(3.1)	(94.3)	(1.2)	(3.3)	(94.1)	(69.0)	(67.8)	(609)
36-59	79.0	100.0	0.0	0.3	99.3	0.3	0.2	99.0	98.4	97.3	1157
	(69.6)	(97.7)	(2.7)	(3.0)	(92.8)	(2.5)	(3.3)	(92.3)	(44.6)	(42.9)	(1055)
Sector											
Colombo metro	80.3	100.0	3.2	4.0	87.0	3.2	4.0	87.0	79.9	79.4	337
	(74.9)	(95.8)	(7.6)	(5.3)	(74.5)	(7.2)	(5.7)	(73.4)	(42.2)	(41.4)	(226)
Other urban	88.8	100.0	6.5	3.3	82.1	8.3	3.3	79.5	75.8	72.6	251
	(80.1)	(97.1)	(6.1)	(6.9)	(82.4)	(6.1)	(6.9)	(82.4)	(53.1)	(50.7)	(183)
Rural	84.2	100.0	3.4	4.0	87.0	3.4	4.0	86.9	80.1	79.6	2317
	(78.9)	(98.7)	(6.0)	(7.0)	(80.1)	(5.7)	(7.1)	(79.9)	(47.3)	(46.5)	(2381)
Estate	51.1	100.0	2.8	6.4	88.2	2.8	6.4	87.7	83.0	80.4	105
	(47.2)	(96.0)	(7.7)	(7.6)	(81.5)	(6.9)	(7.6)	(80.7)	(65.3)	(60.9)	(120)
Zone											
Zone 1	80.3	100.0	3.2	4.0	87.0	3.2	4.0	87.0	79.9	79.4	337
	(74.9)	(95.8)	(7.6)	(5.3)	(74.5)	(7.2)	(5.7)	(73.4)	(42.2)	(41.4)	(226)
Zone 2	91.7	100.0	3.6	3.9	86.0	3.6	4.2	85.7	78.9	78.3	488
	(81.9)	(97.7)	(7.2)	(5.3)	(81.9)	(7.2)	(5.6)	(81.4)	(53.1)	(51.0)	(423)
Zone 3	84.8	100.0	1.8	3.4	88.2	1.8	3.7	87.9	81.0	81.0	431
	(80.1)	(98.4)	(5.4)	(7.9)	(79.6)	(5.2)	(8.1)	(79.4)	(40.0)	(38.6)	(425)
Zone 4	82.7	100.0	3.0	4.6	87.0	3.0	4.4	87.2	80.2	79.1	614
	(82.4)	(99.2)	(6.0)	(6.2)	(80.7)	(5.2)	(6.4)	(80.5)	(48.0)	(47.2)	(678)
Zone 5	74.3	100.0	5.6	3.5	85.5	6.5	3.5	84.2	77.9	76.2	557
	(68.8)	(97.8)	(5.9)	(7.7)	(79.8)	(5.8)	(8.0)	(79.3)	(50.8)	(49.6)	(581)
Zone 6	83.3	100.0	4.5	5.0	84.4	4.2	5.0	84.4	80.1	79.3	221
	(81.1)	(99.7)	(6.5)	(6.1)	(82.9)	(6.5)	(5.9)	(82.9)	(51.5)	(50.7)	(220)
Zone 7	82.0	100.0	3.5	3.7	87.6	3.5	4.0	87.2	82.2	81.4	362
	(69.2)	(98.5)	(5.6)	(9.0)	(78.0)	(5.6)	(8.8)	(78.0)	(48.7)	(48.2)	(358)
Education of mother											
No education	67.7	100.0	3.3	5.7	86.9	3.3	5.7	86.6	83.0	81.5	180
	(62.4)	(95.5)	(6.1)	(9.1)	(72.6)	(6.6)	(9.1)	(71.7)	(42.8)	(40.6)	(233)
Primary	81.2	100.0	3.4	3.4	86.9	3.3	3.5	86.7	82.1	81.3	658
	(72.3)	(98.1)	(7.6)	(8.5)	(76.5)	(6.8)	(8.9)	(76.0)	(44.5)	(43.3)	(814)
Secondary	84.7	100.0	3.4	3.5	87.6	3.8	3.8	86.8	79.6	78.6	1212
	(79.6)	(98.4)	(5.8)	(6.0)	(81.6)	(5.7)	(6.0)	(81.4)	(46.8)	(45.7)	(1134)
More than sec.	83.3	100.0	4.1	4.6	85.2	4.1	4.5	85.3	78.0	77.5	959
	(83.0)	(99.2)	(5.3)	(5.8)	(83.4)	(5.1)	(5.9)	(83.2)	(55.6)	(54.8)	(730)
Total	82.3	100.0	3.6	4.0	86.6	3.7	4.0	86.3	79.9	79.0	3009
	(76.5)	(98.3)	(6.2)	(6.9)	(79.9)	(5.9)	(7.0)	(79.6)	(48.0)	(46.9)	(2910)

(1) Includes births in the period 1-59 months prior to the survry. Figures within parantheses are from DHS 87.

Although the information on fourth dose of DPT(DPT4) and Polio (Polio4) vaccines were collected in the survey, this table amalgamates third and fourth vaccinations together in order to compare with DHS87 information. This is graphically shown in Figure 6.4.



Overall, 82.3 percent of children under five had a health card. This is an increase of 8 percent since 1987. All the children who had health cards have been immunized with BCG. Among them, very high percentages of 86.6 percent received three or four doses of DPT and 86.3 percent received three or four doses of Polio. This shows an increase of about 8 percent during 1987-93 for both DPT and Polio. Measles vaccination also shows an overall coverage of about 80 percent. Immunization against measles which was introduced in 1985 shows a remarkable increase of 66 percent during 1987 and 1993. Full coverage also shows an increase of 68 percent from 46.9 percent in 1987 to 79 percent in 1993. These proportions are very high compared with many other countries and indicate that the vast majority of children in Sri Lanka are being reached by the health system.

The examination of differentials by selected variables indicates that the percentage with a health card is above 70 for almost all the categories except for those with no education (67.7 percent) and estate women (51.1 percent). Percentage who had health cards has increased for almost all categories since 1987. The percentages of children immunized with three or more doses of DPT and Polio are both above 80 percent and measles coverage is over 75 percent for various levels of sector, zone and education. This is an indication of the successful immunization programme reaching all over the country and across different groups of people.

Presented in Table 6.12 are the data on immunization coverage for specific immunizations for children age 12-23 months. We expect the children to be immunized within age 12-23. The rate of full coverage for the children of this age has increased from 67.3 percent to 95 percent during the period 1987-1993 with the increase of 27.7 percentage points. In general, coverage is high for BCG, DPT3, Polio3 and measles when compared with 1987 data. Measles coverage has increased significantly from 68.5 percent to 95.5 percent and it is an evidence that more children have been protected against measles in recent years. For all background characteristics, full coverage has increased significantly.

6.6.2 Prevalence of Diarrhoea

Diarrhoeal diseases are still a public health problem and a major cause of infant and child mortality in Sri Lanka. Diarrhoea results rapid dehydration which can be prevented through the proper use of Oral Rehydration Salt (ORS). The common ORS is Sri Lanka is 'Jeevanee'. The Ministry of Health as well as many private organizations are engaged in the distribution and educating the women on how to use Jeevanee.

In this survey, mothers with children under five years of age were asked if their children had diarrhoea four or more times a day in the last 24 hours. If the answer was negative, they were then asked if the child had diarrhoea in the last two weeks. Then the child was considered as having diarrhoea if he/she had diarrhoea in the 24 hours or 2 weeks preceding the survey. Mothers were also asked about the actions taken to treat the children. Further, the knowledge of Jeevanee or any other solutions was also inquired.

The measurement of diarrhoeal diseases is subject to several constraints. First, diarrhoea occurs seasonally with high prevalence during the monsoon period than the dry season. Second, the interpretation of diarrhoea by one mother may be different from another. Third, there may be recall lapses in reporting occurrences during the two weeks period. These factors may distort the prevalence figures and therefore, they should be interpreted with care.

Table 6.12 Vaccinations of children aged 12-23 months

Among all children 12-23 months of age, the percent with a health card, and among children with a health card, the percent who have received specific immunizations and the percent fully immunized (BCG, DPT, Polio, Measles), by background characteristics.

Background characteristic	Percentage with a card	Percent immunized with								Number of children with health cards
		BCG	DPT			Polio			Measles	Full coverage	
			1	2	3+4	1	2	3+4			
Sector											
Colombo metro	85.5	100.0	1.1	0.0	98.9	1.1	0.0	98.9	94.4	94.4	79
	(82.4)	(96.4)	(5.4)	(3.6)	(89.3)	(5.4)	(3.6)	(89.3)	(64.3)	(62.5)	(48)
Other urban	80.6	100.0	0.0	0.0	100.0	0.0	0.0	100.0	96.3	96.3	44
	(91.7)	(93.9)	(7.6)	(0.0)	(89.4)	(7.6)	(0.0)	(89.4)	(66.7)	(63.7)	(32)
Rural	87.0	100.0	0.0	0.5	99.5	0.0	0.5	99.4	96.1	95.5	508
	(83.5)	(99.8)	(1.2)	(4.4)	(94.0)	(1.0)	(4.6)	(93.8)	(68.8)	(68.0)	(528)
Estate	53.5	100.0	0.0	4.9	95.2	0.0	4.9	95.1	84.7	82.3	22
	(56.5)	(96.6)	(6.1)	(1.7)	(92.2)	(6.1)	(3.4)	(90.5)	(71.9)	(66.8)	(27)
Zone											
Zone 1	85.5	100.0	1.1	0.0	98.9	1.1	0.0	98.9	94.4	94.4	79
	(82.4)	(96.4)	(5.4)	(3.6)	(89.3)	(5.4)	(3.6)	(89.3)	(64.3)	(62.5)	(48)
Zone 2	95.5	100.0	0.0	0.0	100.0	0.0	0.0	100.0	98.4	96.9	94
	(87.4)	(97.8)	(4.4)	(0.0)	(94.5)	(4.4)	(0.0)	(94.5)	(73.3)	(72.2)	(88)
Zone 3	88.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	97.7	97.7	100
	(85.1)	(100.0)	(1.3)	(10.0)	(88.7)	(1.3)	(10.0)	(88.7)	(62.5)	(61.3)	(92)
Zone 4	80.9	100.0	0.0	1.4	98.6	0.0	1.4	98.6	94.4	94.4	120
	(87.5)	(100.0)	(2.0)	(1.0)	(96.9)	(1.0)	(2.0)	(95.9)	(66.3)	(66.3)	(132)
Zone 5	78.9	100.0	0.0	0.9	99.1	0.0	0.9	99.1	93.6	93.1	123
	(76.6)	(99.3)	(1.4)	(3.8)	(94.8)	(1.4)	(4.1)	(94.5)	(70.3)	(68.2)	(136)
Zone 6	82.4	100.0	0.0	0.4	99.6	0.0	0.4	99.7	95.5	92.6	42
	(90.7)	(100.0)	(0.0)	(3.4)	(96.6)	(0.0)	(3.4)	(96.6)	(68.3)	(67.1)	(54)
Zone 7	84.6	100.0	0.2	0.9	98.9	0.2	0.9	98.8	94.9	94.8	94
	(71.8)	(99.0)	(1.0)	(7.2)	(89.7)	(1.0)	(7.2)	(89.7)	(73.1)	(72.1)	(85)
Education of mother											
No education	78.3	100.0	0.3	3.6	96.0	0.3	3.6	96.0	90.0	88.7	43
	(65.7)	(98.9)	(6.6)	(1.1)	(90.2)	(6.6)	(4.5)	(86.8)	(56.7)	(55.6)	(41)
Primary	84.3	100.0	0.7	1.7	97.6	0.7	1.7	97.6	94.6	94.2	129
	(79.0)	(98.8)	(4.0)	(8.0)	(87.0)	(3.3)	(8.0)	(87.0)	(59.7)	(59.1)	(177)
Secondary	84.8	100.0	0.0	0.0	100.0	0.0	0.0	100.0	95.6	95.3	257
	(84.8)	(98.8)	(1.4)	(3.5)	(94.7)	(1.4)	(3.7)	(94.5)	(67.5)	(65.1)	(240)
More than sec.	85.9	100.0	0.0	0.0	100.0	0.0	0.0	100.0	97.0	96.3	223
	(86.8)	(100.0)	(0.0)	(1.3)	(98.7)	(0.0)	(1.3)	(98.7)	(81.3)	(81.3)	(178)
Total	84.6	100.0	0.2	0.6	99.3	0.2	0.6	99.3	95.5	95.0	653
	(82.1)	(99.1)	(2.1)	(4.0)	(93.4)	(1.9)	(4.3)	(93.1)	(68.5)	(67.3)	(636)

(1) Figures within parantheses are from DHS 87.

Prevalence of diarrhoea among children under 5 years of age during the preceding 24 hours and preceding 2 weeks is given in Table 6.13. The overall percentage of children under 5 years

Table 6.13 Diarrhoeal diseases

Among all children under 5 years of age* the percent having an episode or diarrhoea 24 hours or two weeks preceeding the survey by selected background characteristics.

Background characteristic	Percent of children with Diarrhoea in past		Number of children
	24 hours	2 weeks**	
Child's age in months			
01-05	4.4	7.1	324
06-11	4.3	10.8	404
12-23	2.6	7.9	772
24-35	0.5	3.4	693
36-59	0.8	2.2	1465
Sex			
Male	1.7	5.5	1918
Female	1.9	4.4	1739
Sector			
Colombo metro	0.6	3.3	419
Other urban	1.9	4.3	283
Rural	1.9	5.2	2751
Estate	3.7	7.2	205
Zone			
Zone 1	0.6	3.3	419
Zone 2	1.9	5.8	532
Zone 3	1.6	5.4	508
Zone 4	1.1	4.0	743
Zone 5	2.5	4.1	749
Zone 6	2.7	6.3	265
Zone 7	2.7	7.6	441
Education of mother			
No education	4.0	6.8	265
Primary	1.6	5.2	810
Secondary	1.3	4.6	1431
More than secondary	2.1	4.9	1152
Total	1.8	5.0	3657

* Includes births in the period 1-59 months propr to the survey.
** Includes 24 hour period

of age with diarrhoea during the preceding 2 weeks is only 5 percent and it is 1.8 percent in the 24 hours before the survey. The prevalence of diarrhoea in the two weeks prior to the survey is highest

among the children of age 6-11 months (10.8 percent) and declines thereafter. In the 24 hours preceding the survey a negative relationship can be seen between age and prevalence of diarrhoea. Estate children experienced the highest prevalence of diarrhoea while Colombo metro children experienced the lowest. Among zones, the lowest rate of prevalence was found among the children in zone 1 which is Colombo metro area. The highest prevalence in the last 24 hours (4 percent) is recorded for children whose mothers have no education. Percentages of prevalence in the two weeks preceding the survey by educational levels show little differences.

6.6.3 Treatment of Diarrhoea

If the children had diarrhoea in the 24 hours or 2 weeks preceding the survey, their mothers were asked about the medical facility consulted, Jeevanee or any other ORS and other treatments given. All the other treatments reported by the mothers were also recorded.

Among 183 children with diarrhoea in the past two weeks, Table 6.14 shows the proportion of children who did not receive any treatment, proportion of children whose mothers consulted a medical facility. It also shows the type of treatment the mother or someone else gave the child. It should be noted that women were able to specify more than one type of treatment for children with diarrhoea and all those treatments were recorded.

While the numbers in cells are small, overall a very high proportion of 71 percent of children who had diarrhoea in the past two weeks were taken to a medical facility for treatment. Among the treatments given by the parents or someone else, the largest proportion (72.1 percent) falls into the "other treatment" category which includes tablets, injections, syrups and changes in diet. Nearly one third of the children were treated with ORS packets and about 38 percent were given water. Only 6 percent of the children received no treatment , but among this group there are several outstanding differentials. Children of age 1 to 5 months (13 percent), are more likely to receive no treatment for diarrhoea. Also, children in zone 5 are far more likely to receive no treatment than children in other zones.

Children of age 1-5 months are less likely to use ORS packets than the others and the female children are more likely to be given any kind of treatment for diarrhoea than the male children. It is significant that all the children in Colombo metro who had diarrhoea received treatment and were given ORS packets, water and other treatments than the others. Consulting a medical facility, receiving ORS packets and water as a treatment is also lower for mothers with more than secondary education. About 59 percent consulted a medical facility, 21 percent were given ORS packets and

Table 6.14 Treatment for diarrhoea

Among children under 5 years of age* who had diarrhoea in the past two weeks the percentage consulting a medical facility and the percentage receiving different treatments** as reported by the mother, according to background characteristics.

Background characteristic	No treatment received	Consulted a medical facility	ORS packets	Water	Other treatment ***	Number of children with diarrhoea
Child's age in months						
01-05	13.0	60.9	17.4	21.7	56.5	23
06-11	9.3	67.4	25.6	44.2	79.1	43
12-23	1.6	73.8	47.5	42.6	78.7	61
24-35	4.3	87.0	39.1	52.2	82.6	23
36-59	6.3	68.8	31.3	15.6	59.4	32
Sex						
Male	7.5	68.2	29.9	31.8	69.2	107
Female	3.9	74.0	40.3	45.5	76.6	77
Sector						
Colombo metro	0.0	80.0	66.7	40.0	80.0	15
Other urban	8.3	83.3	33.3	25.0	75.0	12
Rural	6.3	68.3	30.3	38.7	73.9	142
Estate	6.7	80.0	40.0	26.7	46.7	15
Zone						
Zone 1	0.0	80.0	66.7	40.0	80.0	15
Zone 2	3.2	67.7	29.0	51.6	77.4	31
Zone 3	3.7	81.5	37.0	40.7	85.2	27
Zone 4	6.7	76.7	33.3	43.3	73.3	30
Zone 5	12.9	64.5	29.0	35.5	51.6	31
Zone 6	5.9	64.7	41.2	29.4	76.5	17
Zone 7	6.1	66.7	24.2	15.2	72.7	33
Education of mother						
No education	5.3	78.9	42.1	36.8	63.2	19
Primary	2.4	85.7	38.1	35.7	66.7	42
Secondary	6.2	69.2	40.0	43.1	73.8	65
More than secondary	10.3	58.6	20.7	32.8	77.6	58
Total	6.0	71.0	34.4	37.7	72.1	183

* Includes births in the period 1-59 months prior to the survey.
** Woman were able to specify more than one treatment received for children with diarrhoea.
*** Includes tablets, injections, syrups and changes in diet.

33 percent were given water. But, the percentage of other treatment is higher (77.6 percent) for the children whose mothers having more than secondary education.

6.6.4 Knowledge and Use of ORS Packets

A mother is classified as having knowledge on ORS, if she reported using ORS packets to treat one of her children for diarrhoea in the two weeks preceding the survey or if she has ever heard of it. A large majority, 94.1 percent of mothers knew about ORS packets and 51.8 percent had used ORS sometime to treat children for diarrhoea as shown in Table 6.15. Knowledge is relatively

Table 6.15 Knowledge and use of ORS packets

Percentage of mothers with births in the 5 years preceeding the survey who know about and have ever used ORS packets, by selected background characteristics

Background characteristic	Know about ORS packets	Have ever used ORS packets	Number of mothers
Mother's age			
15-19	96.7	29.5	61
20-24	93.4	42.9	557
25-29	94.2	52.1	841
30-34	94.5	57.0	741
35+	94.0	54.8	695
Sector			
Colombo metro	95.6	64.8	338
Other urban	96.4	52.9	221
Rural	94.3	50.3	2193
Estate	83.2	43.4	143
Zone			
Zone 1	95.6	64.8	338
Zone 2	96.1	59.4	441
Zone 3	95.7	47.1	414
Zone 4	95.2	45.1	587
Zone 5	90.1	49.0	557
Zone 6	93.3	54.8	208
Zone 7	92.6	48.4	351
Education of mother			
No education	82.1	50.3	195
Primary	92.5	54.3	599
Secondary	94.7	52.5	1127
More than secondary	96.7	49.6	974
Total	94.1	51.8	2895

Note: Figures include mothers who have given ORS for diarrhea during the preceeding two weeks, although they were not asked about knowledge of ORS packets.

higher among young women of age 15-19 (96.7 percent), women in urban areas (over 95 percent) who are in zone 1 and among women with more than secondary education (96.7 percent). But, the use of ORS packets is very low (29.5 percent) among the women of age 15-19 compared with the women in other age groups. Use is relatively low (49.6 percent) among the women with more than secondary education too. Sixty five percent of women in Colombo metro have used ORS as a treatment for diarrhoea. Among zones, although there is less variation of knowledge (ranging from 90.1 percent to 96.1 percent) the variation of use is greater (ranging from 45.1 percent to 64.8 percent).

CHAPTER 7

FEEDING PATTERNS AND THE NUTRITIONAL STATUS OF CHILDREN

H.R. Gunasekera

Feeding practices are important determinants of the nutritional status of children, particularly those under the age of two years. With improved nutritional status, the risk of mortality among children can be reduced significantly. Many studies have shown the beneficial effects of breastfeeding on nutritional status, morbidity and mortality of young children. Patterns of breastfeeding are of particular interest as it has an indirect effect on the postpartum fertility of the mother. More frequent breastfeeding for longer durations is associated with longer periods of postpartum amenorrhoea. Longer periods of postpartum amenorrhoea are related to longer birth intervals, leading to lower fertility levels. Breastfeeding is treated as the best form of feeding during the first six months of infancy. Supplementary foods introduced initially around four months greatly contribute to the nutritional needs of the growing child. Proper and adequate feeding starting at birth is vital for physical and mental development of a child.

The survey collected information on breastfeeding practices and the ages at which the liquids and solid or mushy foods were first given to children on a regular basis. The mother was also asked about liquids and solid or mushy foods given to the youngest child who is still breastfeeding and the use of bottles with nipples for them. The reference period used was 24 hours preceding the interview. The birth weight of the child was also recorded. The anthropometric measurements were collected for all the children aged three months or more and less than five years and who were present in the household.

This chapter analyses the breastfeeding patterns and food supplementation followed by the analysis of anthropometric measurements in relation to the nutritional status of children.

7.1 Prevalence of Breastfeeding and Supplementation

Table 7.1 shows the percentage of children under five years who were ever breastfed and who received colostrum.

Table 7.1 Initial breastfeeding

Percentage of all children born in the last five years who were ever breastfed and children who received colostrum, according to background characteristics

Background characteristic	Among all children		
	Percent ever breastfed	Percent received colostrum	Number of births
Sex of child			
Male	97.7	54.3	1932
Female	98.3	55.6	1752
Sector			
Colombo metro	98.3	63.1	422
Other urban	94.5	63.9	290
Rural	98.7	55.3	2764
Estate	93.7	19.2	206
Zone			
Zone 1	98.3	63.1	422
Zone 2	99.4	53.6	533
Zone 3	97.6	49.6	510
Zone 4	98.0	59.1	744
Zone 5	96.7	51.8	760
Zone 6	98.9	59.0	269
Zone 7	98.4	50.8	444
Education of mother			
No education	95.9	33.7	266
Primary	97.0	44.6	814
Secondary	98.5	53.6	1442
More than secondary	98.5	68.5	1161
Assistance at delivery			
Medically trained	98.2	56.0	3468
Traditional midwife	96.2	41.3	131
Other or none	94.1	32.5	85
Place of delivery			
Health facility	98.2	56.1	3457
At home	95.4	34.6	218
Other	..	..	..
Total	98.0	54.9	3684

.. Number of births less than 10

At the overall level, 98 percent of the children were ever breastfed; hence breastfeeding is nearly universal in Sri Lanka. The differentials by background variables are generally small. At least 94 percent of children in every subgroup had been breastfed at sometime. It is important to note that the relatively lowest percentage ever breastfed (94) is recorded for estate children.

The first breast milk, or colostrum, is beneficial to infants since it contains fairly high concentration of antibodies that protect children against certain infectious diseases. It is known that in some instances cultural norms dictate against giving colostrum to new born babies. It is seen that (Table 7.1) nearly 55 percent of children born in the last five years received colostrum. But unlike in the case of ever-breastfeeding some differentials exist by background variables, for percentage of children who received colostrum. The percentage which is around 63 percent for urban sector drops to 55 for rural and only 19 percent is reported for estate sector. There is a clear increase in the percentage of children receiving colostrum with the mother's education. New borns from traditional midwife assisted deliveries and deliveries without any assistance are less likely to get colostrum than others. As expected, children born at health facility centres received higher percentage of colostrum than the deliveries at home.

As explained earlier, all mothers were asked about breastfeeding and food supplementation given to the youngest child in the 24 hours preceding the interview. Children who are exclusively breastfed are defined as receiving breast milk only, with the exception of drops or syrups consisting of vitamins or medicines. The results of breastfeeding patterns are shown in Table 7.2 and Figure 7.1.

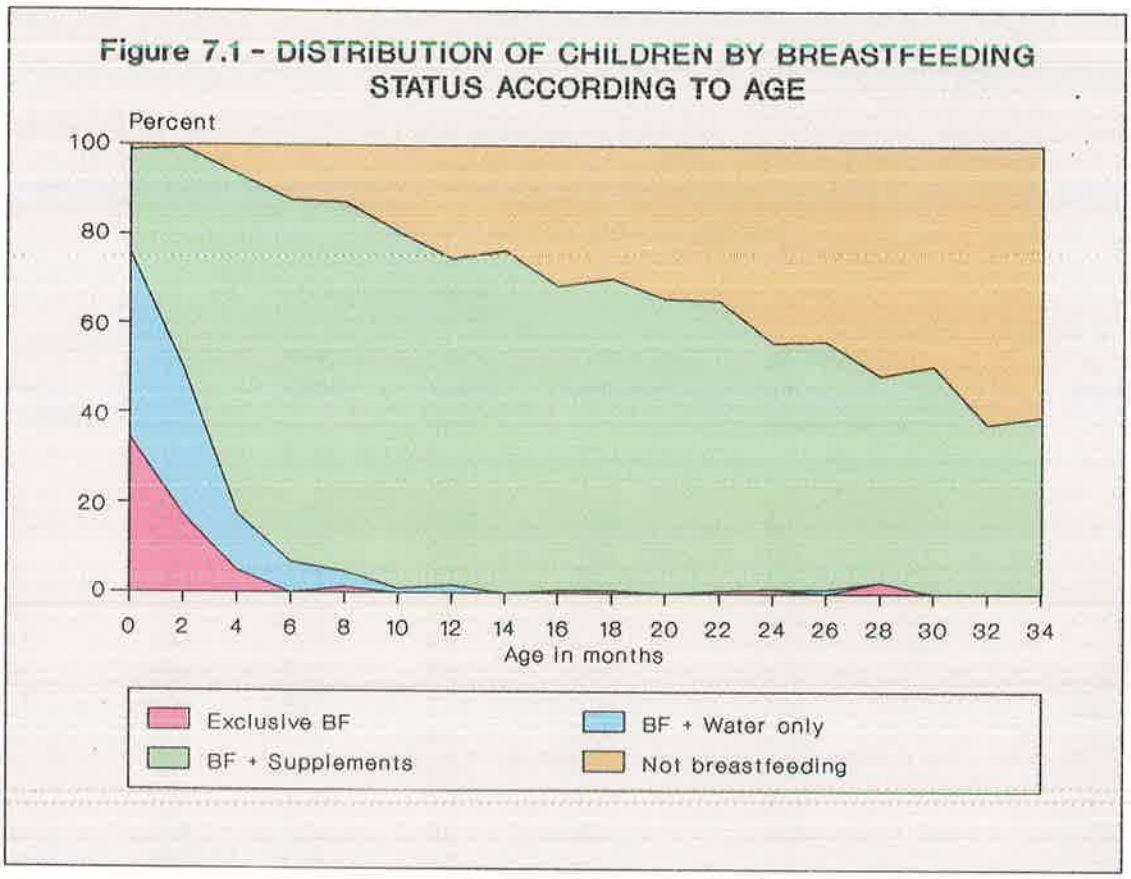
Table 7.2 Breastfeeding status

Percent distribution of youngest living children by breastfeeding status, according to child's age in months

Age in months	Percentage of living children who are: Currently not breastfeeding	Exclusively breastfed	Breastfeeding and: Plain water only	Breastfeeding and: Supplements	Total	Number of living children
0-1	1.1	34.5	41.4	23.0	100	87
2-3	0.7	17.4	32.6	49.3	100	138
4-5	6.7	5.0	12.6	75.6	100	119
6-7	12.3	0.0	6.9	80.8	100	130
8-9	12.8	1.4	3.4	82.4	100	148
10-11	19.4	0.0	1.0	79.6	100	103
12-13	25.4	0.0	1.7	72.9	100	118
14-15	23.5	0.0	0.0	76.5	100	119
16-17	31.5	0.8	0.0	67.7	100	127
18-19	29.8	0.8	0.0	69.4	100	124
20-21	34.3	0.0	0.0	65.7	100	102
22-23	34.7	0.8	0.0	64.4	100	118
24-25	44.1	1.0	0.0	54.9	100	102
26-27	43.8	0.0	1.1	55.1	100	89
28-29	51.8	2.6	0.0	46.1	100	76
30-31	49.3	0.0	0.0	50.7	100	69
32-33	62.2	0.0	0.0	37.8	100	90
34-35	60.5	0.0	0.0	39.5	100	76

Note: Breastfeeding status refers to the preceding 24 hours.
Children classified as breastfeeding and plain water only receive no supplements.

Only 1 percent of the infants less than 2 months of age are not currently breastfeeding. This percentage generally increases as the age advances as shown in Figure 7.1. For example, 9 percent of infants under 1 year of age, 19 percent under 2 years of age and 28 percent under 3 years of age are not currently breastfeeding. The results in Table 7.2 reveal that among infants less than two months of age, 35 percent are exclusively breastfed. However, this percentage drops off very rapidly over the first few months of life; among those aged 2-3 months, 17 percent are exclusively breastfed and by the age 4-5 months it reduces drastically to 5 percent. The proportion of infants less than 4 months of age who are exclusively breastfed are 24 percent for Sri Lanka. The proportion is 17 percent for infants less than 6 months. High percentage of infants under 2 months of age (41 percent) are given water only in addition to breast milk. This is still high at 2-3 months



age group. (33 percent). At age 4-5 months, 3 out of 4 infants are receiving supplementary foods in addition to the breast milk. In every age group thereafter upto 26-27 months, a majority of children are receiving food supplementation. Almost 73 percent of children who have just completed their first year of life are receiving food supplementation in addition to breastfeeding, while 25 percent of children in the same age group are not being breastfed at all.

Table 7.3 shows the types of supplementation given to the breastfeeding children by their age in months.

Other milk category consisted of powdered milk or cow's or goat's milk; other liquids included fruit juice, vitamin syrups and any other liquid; solid/mushy foods consisted of any solid or mushy food. The data in Table 7.3 reveals that other milk is fairly extensively used in the diet as a supplement, particularly after 3 months; one out of two breastfeeding infants in the age groups 6-7 and 12-13 are using other milk whereas nearly 3 out of 4 children in the age group 24-25 receive other milk as a supplement. Other liquids form a major component of supplementary food; its use increases from 35 percent for the infants in the 2-3 months of age to 83 percent for the infants in the 10-11 months age group. The percentage receiving solid foods is negligible upto 3 months and

Table 7.3 Type of supplementation

Percentage of youngest breastfeeding children who are receiving specific types of food supplementation and the percentage who are using a bottle with a nipple by age in months

	Percentage of breestfeeding children who are:				
	Receiving supplement				
Age in months	Other milk	Other liquid	Solid/ mushy food	Using a bottle with a nipple	Number of living children currently breastfeeding
0 1	(9.3)	(15.1)	(1.2)	(22.1)	86
2-3	19.7	35.0	(0.7)	47.4	137
4-5	35.1	72.1	29.7	55.9	111
6-7	51.8	78.1	60.5	59.6	114
8-9	48.5	81.5	74.6	56.9	130
10-11	61.4	83.1	84.3	60.2	83
12-13	53.4	69.3	92.0	44.3	88
14-15	60.4	76.9	94.5	41.8	91
16-17	62.1	79.3	96.6	47.1	87
18-19	57.5	64.4	95.4	36.8	87
20-21	47.8	73.1	97.0	37.3	67
22-23	55.8	75.3	97.4	41.6	77
24-25	71.9	71.9	96.5	36.8	57
26-27	60.0	78.0	98.0	(36.0)	50
28-29	(43.2)	73.0	94.6	(29.7)	37
30-31	75.0	75.0	86.1	(27.8)	36
32-33	(55.9)	82.4	91.2	(23.5)	34
34-35	(53.3)	(66.7)	100.0	(23.3)	30

Note: Breastfeeding status refers to the preceding 24 hours.
Percentages by type of supplement among breastfeeding children may sum to more than 100% as child may have received more than one type of supplement.
Figures within parantheses are based on less than 25 cases.

the transition to solid and mushy foods as a supplement starts around 4-5 months and solid food intake rapidly increases thereafter. Almost all children are given these before they complete their third year of life.

The use of a bottle with a nipple to provide powdered milk and other types of supplementary food is of particular interest to both nutritionists and demographers. Bottle use is not generally recommended at early stages of infancy due to the possible risk of exposing the child for developing diarrhoea and other diseases as a result of unhygienic preparation of the liquid and inadequate steps

to sterilise the nipple and the bottle. Demographers are concerned on this issue as bottle feeding leads to shortened the women's amenorrhoeic period thereby increasing the mother's exposure to the risk of pregnancy. Among breastfeeding newborns, 22 percent have already used a bottle with a nipple. This percentage increases upto 60 percent for infants in the 10-11 months of age and a general decreasing pattern appears thereafter. Bottle feeding is quite high for Sri Lanka compared to some other countries in Asia. For example, the average percentage of breastfeeding children below 6 months who are using a bottle with a nipple is 8.4 for Indonesia (Central Bureau of Statistics, Indonesia, 1992), 25.6 for Pakistan (National Instituite of Population Studies, Pakistan, 1992) and 30.8 for Philippines (National Statistics Office, Philippines, 1994) whereas the corresponding percentage for Sri Lanka is 41.8.

Table 7.4 shows in more detail the items of liquid and food given during the 24 hours preceding the interview. This is graphically shown in Figure 7.2.

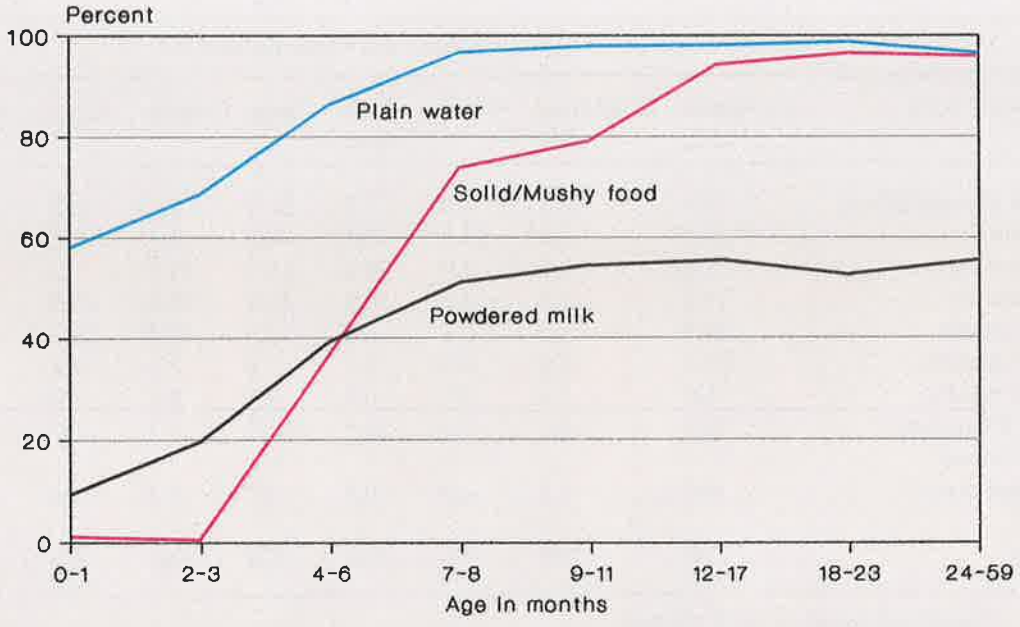
Table 7.4 Nutritional intake

Percentage of youngest breastfeeding children given various liquids and food items the day before the interview, by age of child and type of liquid or food item

Liquid or food item	Age of child								Total
	0-1 months	2-3 months	4-6 months	7-8 months	9-11 months	12-17 months	18-23 months	24-59 months	
Plain water	58.1	68.6	86.5	96.7	97.9	98.1	98.7	96.6	91.6
Fruit juice	0.0	13.1	45.9	47.2	43.4	42.1	35.2	36.0	35.5
Powdered milk	9.3	19.7	39.4	51.2	54.5	55.6	52.6	55.4	47.2
Cow/ Goat milk	0.0	0.0	0.6	1.6	2.1	3.8	2.2	7.4	3.3
Vitamin syrups/ Medicine	9.3	19.0	28.2	26.8	29.0	25.2	20.9	15.0	21.3
Any other liquid	4.7	17.5	47.1	51.2	55.9	46.2	48.7	51.7	44.6
Any solid or mushy food	1.2	0.7	37.1	74.0	79.3	94.4	96.5	96.1	72.6
Liquid and solid	1.2	0.7	36.5	74.0	79.3	94.4	96.1	95.6	72.3
Number of children currently breastfeeding	86	137	170	123	145	266	230	406	1562

Note: Percentages add to more than 100 because children may have received more than one item.

Figure 7.2 - PERCENTAGE OF YOUNGEST BREASTFEEDING CHILDREN GIVEN WATER, POWDERED MILK AND SOLID/MUSHY FOOD THE DAY BEFORE THE INTERVIEW



It is seen that plain water is given to the largest proportion of children (92 percent) followed by solid or mushy food (73 percent). The smallest percent of 3 percent is recorded for fresh cow's or goat's milk. In fact, plain water is given to the largest proportion of children in all the age groups presented in Table 7.4. As expected, older children are much more likely to be provided with solid or mushy foods than younger children. The percentage of infants in the 4-6 months receiving powdered milk (39.4) is twice compared to the infants receiving the same item in the age group 2-3 months (19.7 percent). Almost one in two infants in the 7-8 months of age receive powdered milk and that value remains nearly the same for the children upto 5 years.

7.2 Age of Introducing Supplements

Information was also collected on the age at which liquids and foods were introduced regularly for the children born in the five years preceding the survey. The results are shown in Table 7.5 and Figure 7.3.

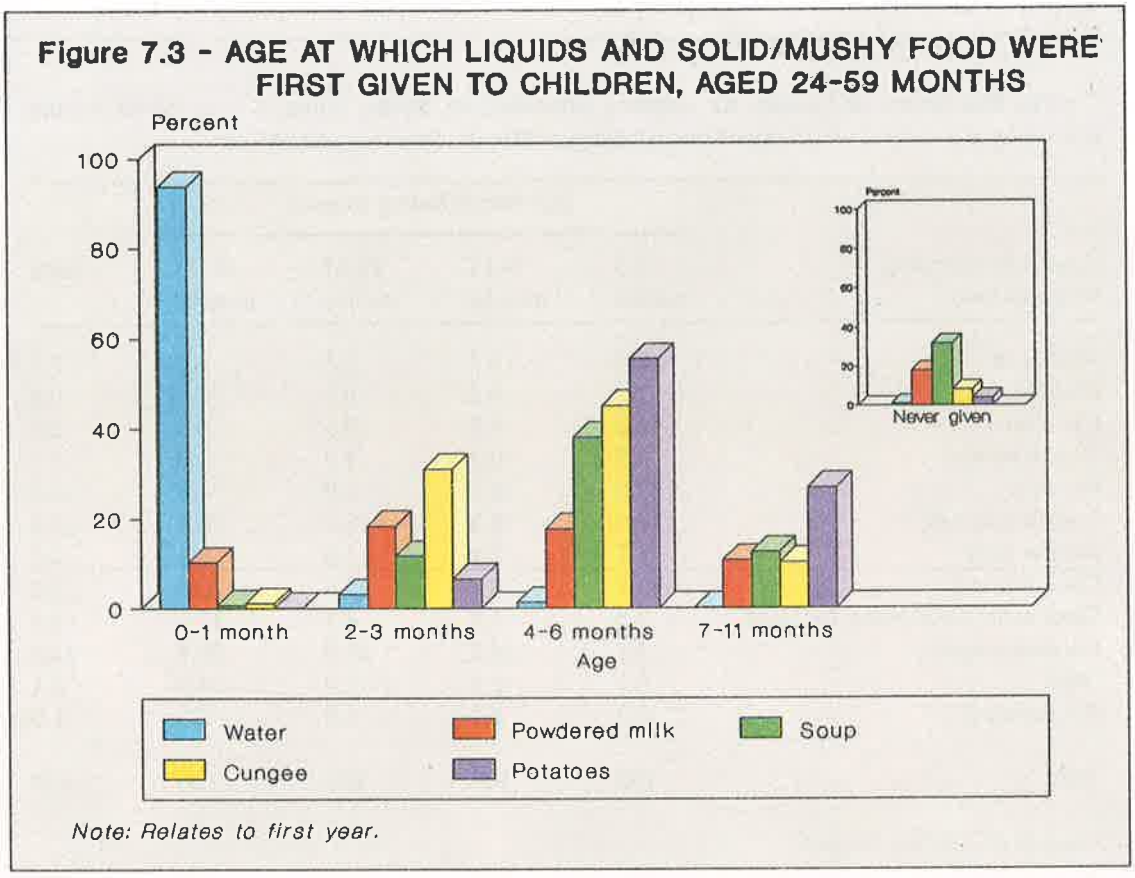
Table 7.5 Age at which liquids and foods were introduced

Percent distribution of children born 24-59 months preceding the survey by type of liquids and foods introduced according to the age at which such liquids and foods were given regularly

Age at introduction of Liquids/ Foods	Liquids and foods introduced							
	Powdered milk	Cow/ Goat milk	Water	Fruit juice	Soup	Cungee	Eggs	Potatoes/ Cereal
Never given regularly	17.9	77.2	1.0	7.9	31.7	8.1	6.6	3.9
0-1 month	10.3	2.8	93.8	2.1	0.6	1.1	0.6	0.1
2-3 months	18.4	0.6	3.0	38.0	11.7	31.1	5.3	6.5
4-6 months	17.7	2.2	1.2	39.3	38.0	45.0	45.6	55.4
7-11 months	10.7	3.0	0.1	9.6	12.5	10.2	25.9	26.9
12-17 months	12.1	5.6	0.0	1.9	2.8	2.1	12.8	5.8
18-23 months	4.0	1.9	0.0	0.0	0.3	0.2	1.0	0.3
After 23 months	8.2	6.0	0.0	0.6	0.9	0.7	1.7	0.8
Don't know/ Not reported	0.6	0.7	0.9	0.5	1.5	1.3	0.4	0.2
Total	100	100	100	100	100	100	100	100

Note: Figures are based on 2158 children

Here the data are tabulated for children with more than two years of age and less than five years and their experience during the 0-23 months is examined in order to get the full exposure. Of course, it is possible to introduce certain foods for some children after 23 months of age, who are currently between 24-59 months of age. That category is shown as 'after 23 months' in Table 7.5. It is seen that 18 percent of the children under concerned are never given powdered milk and 10 percent of them received powdered milk when they were below two months of age. The percentage is maximum at 2-3 months (18 percent) and gradually levels off thereafter. Cow/Goat milk is not commonly given to Sri Lankan children as a supplement. Nearly 94 percent are given water regularly in the first two months of life. Fruit juice is introduced mainly during 2-6 months. Soup is never given to 32 percent of the children and 38 percent start receiving at 4-6 months of age. An important determinant of children's growth is the age at which they start receiving solid or mushy foods. Nearly one third of children start receiving cungee on a regular basis by 3 months and 45 percent of children starts that diet at 4-6 months. Approximately 55 percent of children start receiving mashed potatoes/cereals when they are in the age group 4-6 months. The age pattern of the introduction of eggs is also somewhat similar to that of mashed potatoes/cereals; but there is a slight delay in introducing eggs.



7.3 Reasons for Terminating Breastfeeding

The information related to reasons for stopping breastfeeding was also collected in the survey and the results for children born 24-59 months preceding the survey who stopped breatfeeding within the first two years of life are shown in Table 7.6.

At the overall level, the three major reasons for stopping breatfeeding are refusal by the child (23 percent), mothers' pregnancy (22 percent) and insufficient milk of the mother (15 percent). These three reasons alone account for 60 percent of the total reasons for stopping breastfeeding. In addition, mothers did not have milk to feed their infants in 11 percent of the cases. The reason varies with the age at which breatfeeding was stopped. Among the children who stopped the breatfeeding by six months, only 4 percent did so due to the pregnancy of the mother; but this percentage increased to 31 percent for the children who stopped breastfeeding during 18-23 months. In fact the pregnancy of mother is the major reason for stopping breastfeeding for those who stopped during 18-23 months. It is important to note that child refusal accounts for more than 20 percent of total reasons of stopping breastfeeding for all the ages under consideration.

Table 7.6 Reasons for stopping breastfeeding

Precent distribution of reasons for stopping breastfeeding among children born 24-59 months preceding the survey, who stopped breastfeeding within the first two years of life

Reason for stopping breastfeeding	Age breastfeeding stopped				Total
	0-5 months	6-11 months	12-17 months	18-23 months	
Mother ill	8.3	5.7	5.5	9.9	7.3
Child ill	2.0	0.2	0.5	0.6	0.8
Child died	10.0	1.4	0.5	0.0	2.9
Nipple injured	1.5	0.3	1.7	1.0	1.1
No milk	19.5	14.0	4.9	4.9	10.9
Insufficient milk	14.9	15.3	18.2	10.3	14.8
Mother busy	5.2	7.8	3.0	2.3	4.6
Child refused	25.7	23.1	22.8	20.0	22.9
Other milk/ Food better for child	2.8	3.8	8.3	13.1	6.9
Became pregnant	3.7	24.2	28.2	30.7	21.8
Other	6.2	2.5	2.9	4.9	4.1
Not reported	0.2	1.7	3.5	2.3	1.9
Total	100	100	100	100	100
Number of children stopped breastfeeding	258	284	270	254	1066
Percentage of children stopped breastfeeding	24.2	26.6	25.3	23.8	100.0

7.4 Duration of Breastfeeding

The mean duration of breastfeeding according to selected background variables are presented in Table 7.7.

The estimates of mean are based on current status data and calculated by dividing the prevalence by incidence of breastfeeding. Prevalence is defined as the number of children under 3 years of age who were being breastfed at the time of the survey. Incidence is treated as the average number of births per month. It is important to note that the information on exclusive breastfeeding was collected only for the youngest living child and hence the mean duration of any breastfeeding is also computed and presented based on the youngest child's information. Table 4.7 in chapter 4 shows the mean duration of any breastfeeding taking into account the total number of children who were breastfeeding at the time of the survey.

Table 7.7 Mean duration of breastfeeding

Mean duration of any breastfeeding, exclusive breastfeeding and full breastfeeding by selected background characteristics

Background characteristic	Mean duration in months			Number of children under 3 yearsof age
	Any breastfeeding	Exclusive breastfeeding	Full [1] breastfeeding	
Sector				
Colombo metro	16.5	...	2.3	249
Other urban	19.5	...	4.0	190
Rural	24.7	1.2	3.6	1620
Estste	23.5	...	...	112
Zone				
Zone 1	16.5	...	2.3	249
Zone 2	22.8	...	2.1	305
Zone 3	24.5	...	2.9	301
Zone 4	22.7	1.7	3.7	434
Zone 5	25.0	2.1	4.0	450
Zone 6	25.2	...	4.6	157
Zone 7	24.8	...	4.7	277
Education of mother				
No education	22.6	...	2.9	137
Primary	23.5	1.3	4.7	447
Secondary	24.3	1.3	3.5	855
More than secondary	21.8	1.1	2.7	733
Assistance at delivery				
Medically trained	23.1	1.2	3.5	2062
Traditional midwife	23.3	...	...	65
Other or none	25.6	...	...	45
Sex of child				
Male	23.3	1.2	3.5	1083
Female	23.1	1.2	3.4	1089
Total	23.2	1.2	3.4	2172

Note: The means are prevalence - incidence means and are based on current status and refers to youngest living child's information.
... Less than or equal to 10 cases.
(1) Either exclusively breastfed or received plain water only in addition to exclusive breastfeeding.

The overall mean duration of breastfeeding is estimated at 23.2 months. Children who live in rural areas are breastfed on the average about 8 months longer than children in Colombo metro areas and 5 months longer than the counterparts in other urban areas. The overall mean duration of exclusive breastfeeding is only 1.2 months. So the results suggest that exclusive breastfeeding is not a common practice in Sri Lanka. The mean duration of full breastfeeding, however, is 3.4 months.

7.5 Birth Weight

Information on birth weight are important for two reasons. First, estimates of the incidence of low birth weight give an indication of the well-being of neonates and women of reproductive age. Second, the birth weight is an important determinant of the survival chances of a newborn. The survey included questions on birth weight for all children born in the five years preceding the survey. If a health card is available, then enumerators examined that and the birth weight was recorded; if such card is not available then the mother was asked the birth weight of the child. Table 7.8 shows the mean birth weight of the children together with the percentage of low birth weight (< 2.5 kg) by background variables based on the information recorded in the health cards.

At the overall level the mean birth weight is 2.8 kg. Estate children are born with low average birth weight than urban and rural counterparts. As expected, the twins have low average birth weight of 2.1kg. Hardly any differentials in the mean birth weight exist with respect to other variables presented in the Table 7.8. This table also reveals that 18.7 percent of newborns have low birth weight (below 2.5kg). In contrast to the mean birth weight, significant differentials are seen for low birth weight with the background variables. Approximately 30 percent of estate children fall into the low birth weight category. There is a clear decreasing pattern of percentage low birth weight as the education level of the mother increases; among the children to mothers with no education, 25 percent record low birth weights and it reduces to 16 percent for the children born to mothers with more than secondary level education. As expected, more than 80 percent of the twin births have weights less than 2.5 kg. Female births seem to be associated with higher proportion of underweight in comparison to male births.

Table 7.8 Birth weight

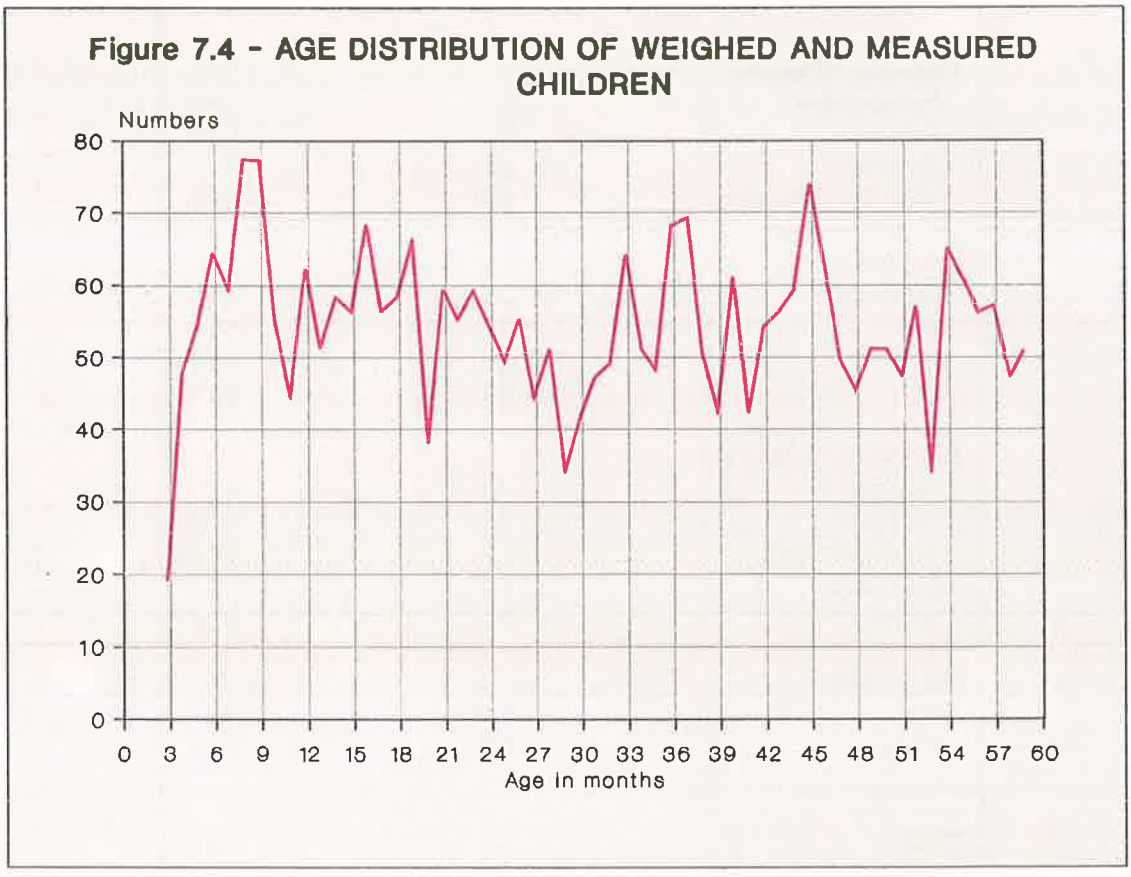
Mean birth weight and incidence of low birth weight (less than 2.5kg) estimated from data from health cards among children born five years preceding the survey by background characteristics

Background characteristic	Mean birth weight (kg)	Percentage low birth weight (<2.5 kg)
Sector		
Colombo metro	2.9	19.4
Other urban	2.9	15.7
Rural	2.8	18.5
Estate	2.6	29.7
Zone		
Zone 1	2.9	19.4
Zone 2	2.9	14.5
Zone 3	2.9	15.4
Zone 4	2.8	22.8
Zone 5	2.7	22.1
Zone 6	2.8	19.9
Zone 7	2.9	14.8
Education of mother		
No education	2.7	25.2
Primary	2.7	23.8
Secondary	2.8	17.7
More than secondary	2.9	15.6
Birth order		
First birth	2.8	19.4
2-3	2.9	16.8
4-5	2.8	21.8
6+	2.7	26.7
Previous birth interval		
<2 years	2.8	15.7
2-3 years	2.9	17.0
4 years or more	2.9	14.3
First birth	2.8	18.3
Twins	2.1	81.5
Sex of child		
Male	2.9	16.7
Female	2.8	21.0
Total	2.8	18.7

7.6 Nutritional Status of Children

The survey collected information on anthropometric measurements of height and weight of children in the age group 3-59 months. The children were weighed using a hanging spring balance scale and the height was measured using a measuring board. The height of a child under 24 months of age was actually recumbent length measured with the child lying down on the board as recommended by World Health Organization (WHO). The accuracy of anthropometric indices calculated from the height and weight data depends on the accuracy of the measurements and the child's reported age. Although age in years is sufficient for most demographic analysis, age in months, calculated from the birth date of the child given by the mother, is required for accurate anthropometric assessment. If there is age heaping it is normally expected to have peaks at months 12, 18, 24, 30, 36, 42 and 48. But Figure 7.4 which gives the frequencies by age of children who were weighed and measured, does not show any definite pattern of age heaping. A total of 3229 children (unweighted cases) were identified as weighed and measured cases between the ages 3 and 59 months. Out of these children 13 (0.4 percent) had grossly improbable height and/or weight recorded. These cases represent errors of measurement or data entry or both and have been excluded from analysis. So the final results are based on 3216 children (unweighted cases).

Figure 7.4 - AGE DISTRIBUTION OF WEIGHED AND MEASURED CHILDREN



The anthropometric indices are compared with the international reference population of the U.S. National Center for Health Statistics (NCHS) and the Centre for Disease Control (CDC) as recommended by the WHO. The nutritional status of children is evaluated by calculating the extent to which the anthropometric measurements deviate from this reference population. Three standard indices have been used to assess the nutritional status; viz; (a) Height-for-age (b) Weight-for-height and (c) Weight-for-age. These three indicators provide somewhat different information about the nutritional status of children. Height-for-age is a measure of linear growth. A child whose height-for-age is minus two standard deviations (-2SD) or below from the median of the reference population is considered stunted or chronically undernourished. Stunting is typically associated with adverse economic conditions. Severe stunting is a relatively gradual process that represents the accumulated effects of malnutrition over a number of years. The weight-for-height index measures acute undernourishment. A child whose weight-for-height falls minus two standard deviations (-2SD) or below from the median of the reference population is classified as wasted or acutely undernourished. This condition is usually associated with short-term undernourishment as a result of disease or inadequate food supply or consumption. The weight-for-height index does not affect by age and hence free of bias due to any age misreporting. Weight-for-age is a composite measure which captures both acute and chronic undernutrition. Children with a weight-for-age is minus two standard deviations (-2SD) or below from the median of the reference population are considered underweight. In a large healthy, well-fed population of children there are always some variation in the three indices discussed above. The variation approximately follows a normal distribution. It is expected that only 2.3 percent fall below minus two standard deviations (-2SD) from the median of the reference population for each of the three indices.

The above criteria is based on the comparison of the proportion of children below a certain cut-off point with the reference population for each of the three anthropometric indices. Therefore, it takes into account only a portion of the sample distribution. The comparison of the distribution of the indicators with that of the reference population gives a more complete picture of the differences since it takes into consideration the whole range of the distribution. In order to do that for each individual a z-score is calculated by subtracting the individual value by median value of the reference population and dividing by the standard deviation value of the reference population. The distribution curves of z-scores for each indicator can be compared with the reference distribution. In order to examine the variability of age patterns the mean z-scores are plotted with the age in months and compared with the reference population.

Results on the percentage of children below -2SD from the reference population for each indicator are presented in Table 7.9. Distribution curves of indicators and mean values of indicators by age expressed in relation to z-scores are shown in Figure 7.5 and Figure 7.6 respectively.

Figure 7.5 - DISTRIBUTION CURVES OF HEIGHT-FOR-AGE, WEIGHT-FOR-AGE AND WEIGHT-FOR-HEIGHT IN RELATION TO REFERENCE POPULATION

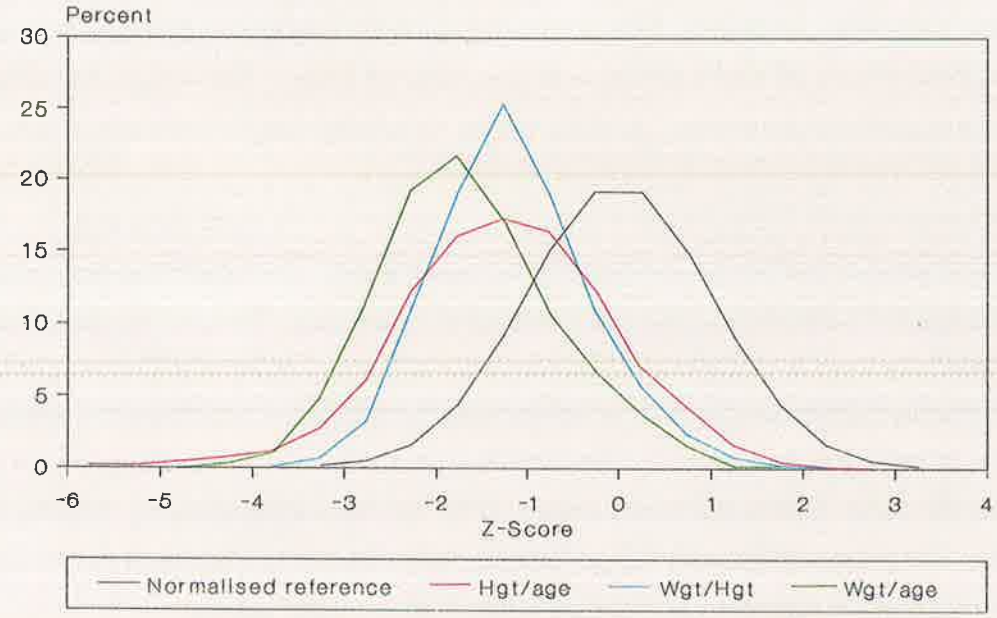
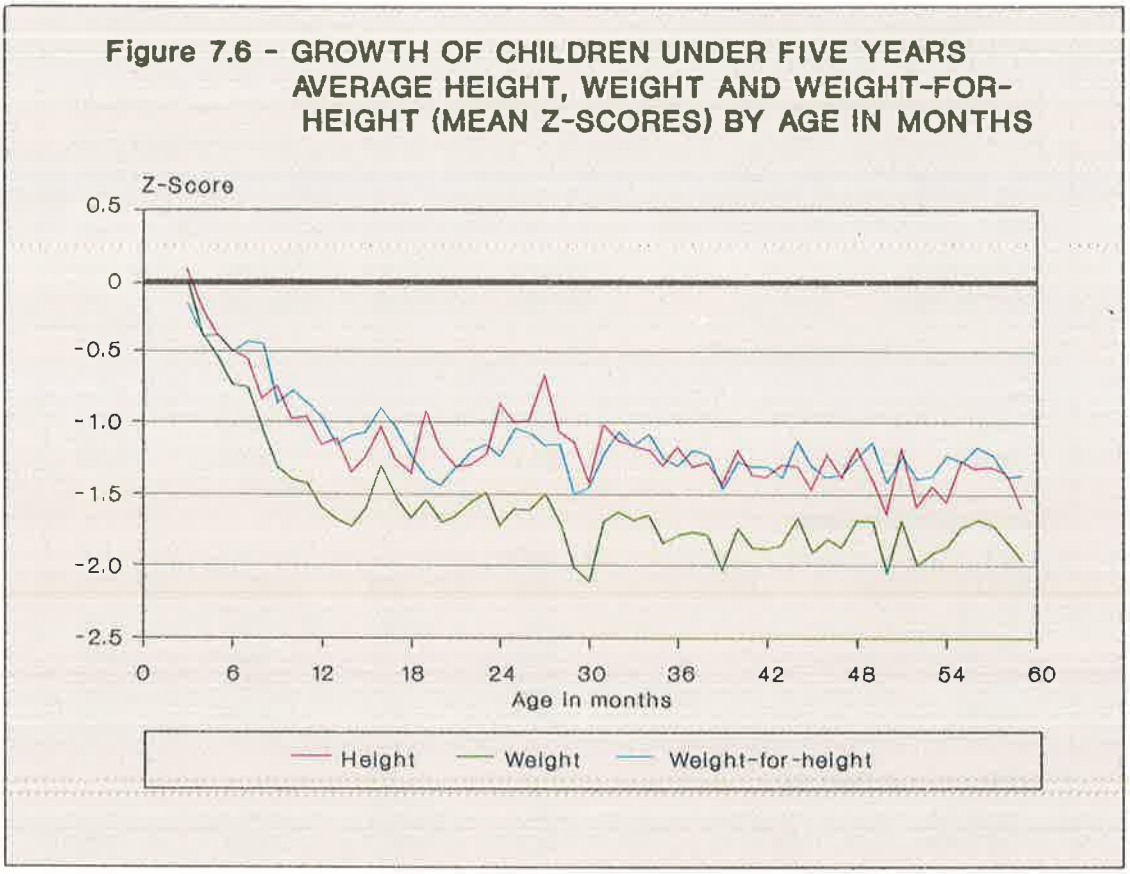


Table 7.9 Nutritional status of children

Percentage of children under five years of age classified as undernourished(below -2 standard diviations from the median of the reference population) according to three anthropometric indices; height-for-age, weight-for-height and weight-for-age by background characteristics

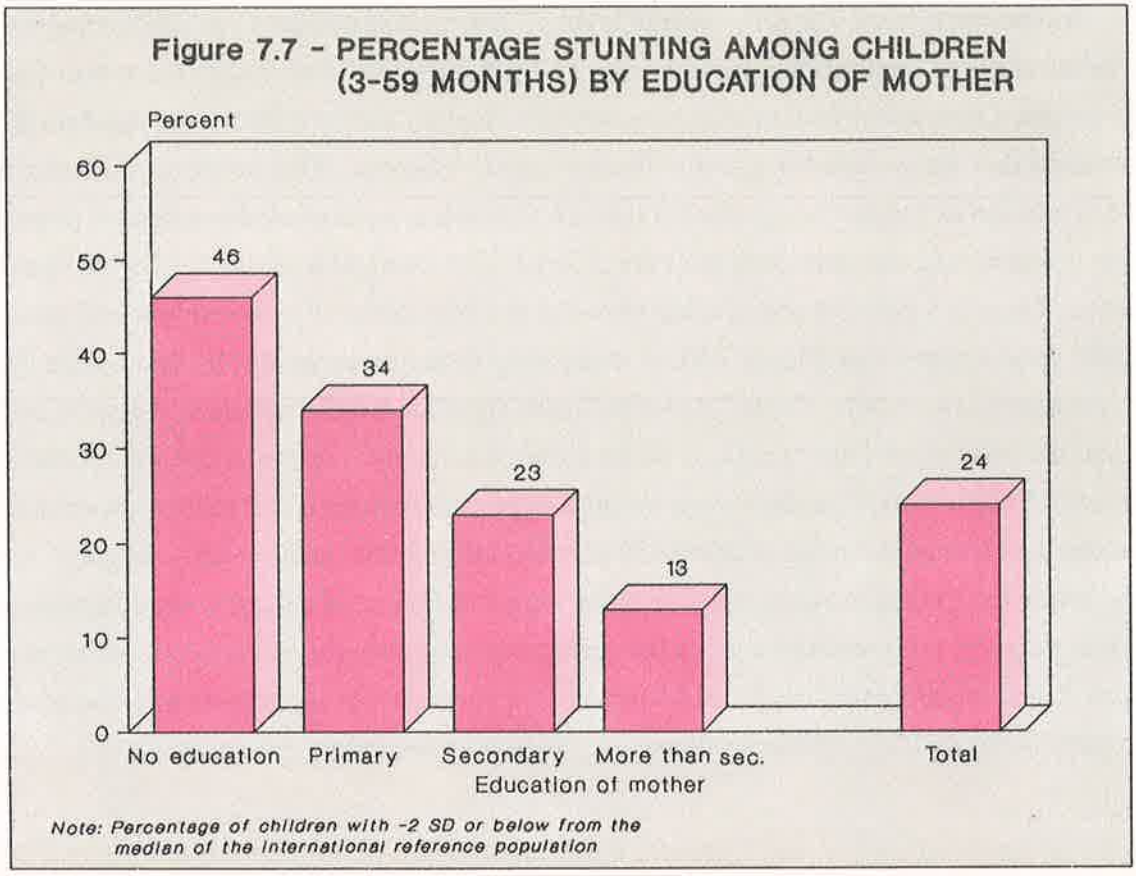
Background characteristic	Height -for-age	Weight -for-height	Weight -for-age	Number of children
Sex				
Male	22.7	15.6	34.8	1610
Female	25.1	15.4	40.9	1458
Child's age in months				
3-5	4.9	3.1	5.8	117
6-11	11.8	6.8	17.9	375
12-23	25.7	18.2	36.3	686
24-35	23.8	15.1	42.4	585
36-47	27.5	18.2	46.7	681
48-59	28.7	17.6	43.0	622
Previous birth interval				
<2 years	28.1	17.8	48.1	416
2-3 years	28.3	16.7	43.7	822
4 years or more	21.2	14.7	32.7	648
First birth	19.9	14.4	31.5	1081
Twins	29.4	14.7	44.4	101
Sector				
Colombo metro	19.7	12.2	31.2	349
Other urban	16.8	16.8	29.9	223
Rural	22.9	16.4	38.3	2321
Estate	53.7	9.5	52.1	175
Zone				
Zone 1	19.7	12.2	31.2	349
Zone 2	14.5	11.0	25.2	457
Zone 3	18.1	17.8	34.6	446
Zone 4	25.2	17.5	38.1	609
Zone 5	32.2	12.6	43.7	589
Zone 6	24.4	20.5	44.9	233
Zone 7	30.2	19.6	48.0	385
Education of mother				
No education	46.0	16.7	53.9	226
Primary	33.6	18.7	47.8	683
Secondary	22.6	16.8	39.1	1222
More than secondary	13.0	11.3	24.6	936
Total	23.8	15.5	37.7	3067



7.6.1. Height-for-age

It is seen from Table 7.9 that 23.8 percent of the children are -2SD or more below the median of the reference population. Hence little below quarter of the children under five years of age in Sri Lanka are suffering from chronic malnutrition. The comparison of the distribution curve for height-for-age with the reference population as shown in Figure 7.5 shows clearly its shift to the left. This indicates that the percentage of children below any given value of height-for-age is more in the sampled population than the reference population implying a poor nutritional status. Sex differentials appear to be negligible, but age is significantly correlated with the prevalence of stunting; it is much less common during the first year of life compared to the ages 1-4 years. There is a marked worsening in nutritional status during the first and second year of life. Only 5 percent of children in the age group 3-5 months are classified as stunted compared to 29 percent of children in the fourth year of life. This is clearly seen in Figure 7.6 which shows the mean values of indicators by age of the children compared to the reference population. In fact the mean height is slightly above the reference population at 3 months of age but soon falls below and declining trend is seen until around 15 months and tends to fluctuate thereafter. Children with previous birth interval of 4 years or more record better nutritional status than others with shorter birth intervals.

By sector, 54 percent of estate children show the signs of chronic undernutrition. This prevalence level of stunting is more than twice the value recorded in rural areas outside the estates and about three times higher than the urban areas. Zone 5 which contains the estate areas records the highest percentage of stunting. Mother's education is negatively related with stunting. The prevalence of stunting is 46 percent for children whose mothers have no education and only 13 percent among children whose mothers have more than secondary level education. This is shown in Figure 7.7.



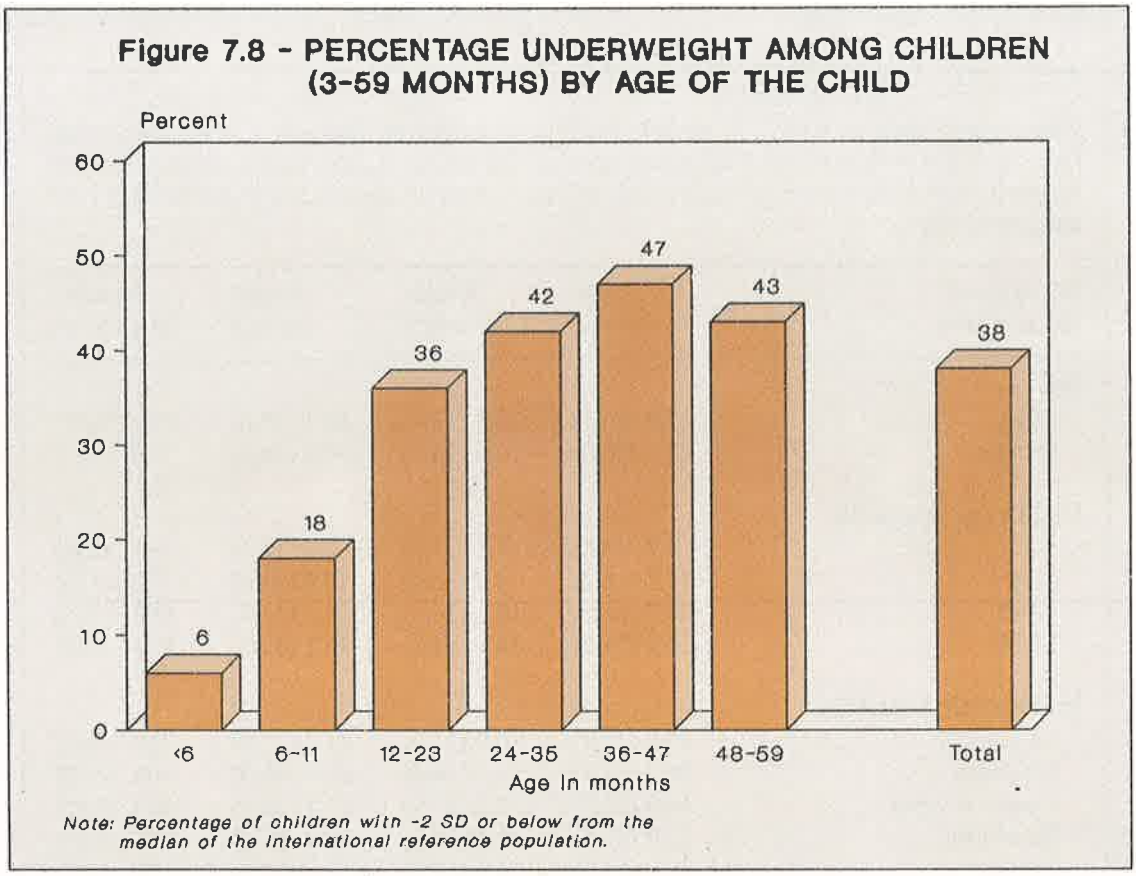
7.6.2 Weight-for-height

Overall, 15.5 percent of children are -2SD or more below the median of the reference population. Hence 15.5 percent of children under five years of age are acutely undernourished. Here again the shift of the distribution to the left of the reference population is seen (Figure 7.5). Table 7.9 also reveals that by sex, there is essentially no difference in wasting. However differentials exist by age, as in the case of stunting, particularly between below one year and above one year. Acute undernutrition increases substantially from 7 percent for the children in the 6-11 months age group to 18 percent in the 12-23 months age group. This pattern is seen for weight-

for-height in Figure 7.6. It is seen from Table 7.9 that the weight-for-height slightly improves as the previous birth interval increases. By sector, estate children have the lowest percentage of wasting. This is expected as the estate children experience the highest percentage stunted, that is short for age. Many of these children appear to have normal relationship between weight and height when age is eliminated.

7.6.3 Weight-for-age

As shown in Table 7.9, at the overall level 37.7 percent of children are -2SD or more below the median of the reference population. Hence 37.7 percent of children under five years of age are underweight. Comparison of distribution curves of indicators and the reference population (Figure 7.5) reveals that the weight-for-age distribution stands leftmost. This confirms that nutritional levels in relation to weight-for-age for Sri Lankan children is well below the reference population and the worse among the three indicators considered. Underweight is higher for female than male children. There is a positive relationship between the prevalence of underweight and the age of the child up to 4 years (see Figure 7.8). A sharp drop of the mean weight by age is seen (Figure 7.6) upto around 14 months. Table 7.9 also indicates significant differentials by the previous birth internal; the percentage underweight is 48 for children with previous birth interval of less than 2 years and it improves to 33 percent when the birth interval is increased to 4 years or more. It is seen that more than half of the estate children (52 percent) fall into the underweight category. Among zones, zone 7 has the highest percentage of underweight children (48 percent). By education, there is a clear negative relationship between the percentage underweight and educational level of the mother. Underweight decreases from 54 percent for children whose mothers have no education to 25 percent for children whose mothers have more than secondary education.



7.6.4 Comparison of Nutritional Levels with DHS 87

The heights and weights were measured in DHS87 only for the children in the ages 3-36 months. Hence a comparison is made by selecting the children of same ages and re-computing the indicators. The results are shown in Table 7.10.

It is seen that at the overall level, the nutritional levels with respect to both height-for-age and weight-for-age have improved between 1987 and 1993; but weight-for-height shows slight deterioration. The distribution curve for height-for-age (Figure 7.9) reveals this improvement. Figure 7.10 shows that the distributions for weight-for-height are almost identical for 1987 and 1993.

Table 7.10 Comparison of nutritional status of children

Percentage of children aged 3-36 months classified as undernourished(below -2 standard deviations from the median of the reference population) according to three anthropometric indices; height-for-age, weight-for-height and weight-for-age by background characteristics for DHS 1987 and DHS 1993

Background characteristic	Height -for-age	Weight -for-height	Weight -for-age	Number of children
Sex				
Male	18.9 (26.4)	13.8 (12.4)	30.7 (37.6)	921 (1063)
Female	22.7 (28.8)	14.0 (13.5)	34.6 (38.6)	910 (931)
Child's age in months				
3-5	4.9 (7.8)	3.1 (1.9)	5.8 (3.7)	117 (158)
6-11	11.8 (15.2)	6.8 (3.9)	17.9 (23.4)	375 (353)
12-23	25.7 (31.1)	18.2 (19.3)	36.3 (42.5)	686 (735)
24-36	23.7 (34.0)	15.4 (13.3)	42.1 (47.9)	653 (748)
Previous birth interval				
<2 years	25.9 (31.8)	20.0 (11.4)	41.4 (41.6)	219 (388)
2-3 years	26.2 (31.7)	14.5 (14.9)	40.9 (40.9)	466 (628)
4 years or more	18.9 (24.2)	12.2 (11.9)	27.5 (32.4)	403 (355)
First birth	15.9 (21.5)	12.8 (12.3)	26.0 (35.6)	665 (596)
Twins	25.9 (44.4)	11.0 (19.3)	42.7 (51.9)	78 (27)
Sector				
Colombo metro	18.5 (21.8)	10.8 (13.4)	25.8 (27.6)	206 (146)
Other urban	13.8 (16.3)	12.9 (10.2)	28.8 (26.5)	143 (118)
Rural	19.6 (26.2)	14.8 (13.6)	32.5 (38.7)	1376 (1600)
Estate	51.1 (60.0)	10.1 (7.1)	53.2 (52.9)	106 (130)
Zone				
Zone 1	18.5 (21.8)	10.8 (13.4)	25.8 (27.6)	206 (146)
Zone 2	11.4 (18.9)	8.0 (11.0)	20.6 (32.2)	258 (259)
Zone 3	14.9 (22.2)	16.6 (12.3)	30.3 (34.1)	273 (291)
Zone 4	22.3 (21.9)	14.2 (15.5)	31.3 (37.1)	352 (437)
Zone 5	29.8 (42.1)	12.0 (9.9)	39.2 (45.2)	361 (451)
Zone 6	21.4 (24.8)	19.1 (11.9)	40.7 (35.5)	138 (144)
Zone 7	23.7 (30.9)	19.2 (16.8)	41.4 (44.8)	243 (266)
Education of mother				
No education	40.8 (50.5)	18.3 (15.2)	50.0 (52.8)	124 (179)
Primary	29.1 (34.3)	18.5 (13.8)	43.6 (44.5)	386 (579)
Secondary	20.0 (25.0)	13.9 (12.5)	31.6 (36.1)	730 (735)
More than secondary	12.1 (15.4)	9.9 (11.8)	23.1 (28.2)	591 (503)
Total	20.8 (27.5)	13.9 (12.9)	32.6 (38.1)	1831 (1995)

Note: The figures within parantheses are from DHS 1987

Figure 7.9 - DISTRIBUTION OF HEIGHT-FOR-AGE FOR DHS 1987 AND DHS 1993 IN RELATION TO REFERENCE POPULATION (3-36 MONTHS)

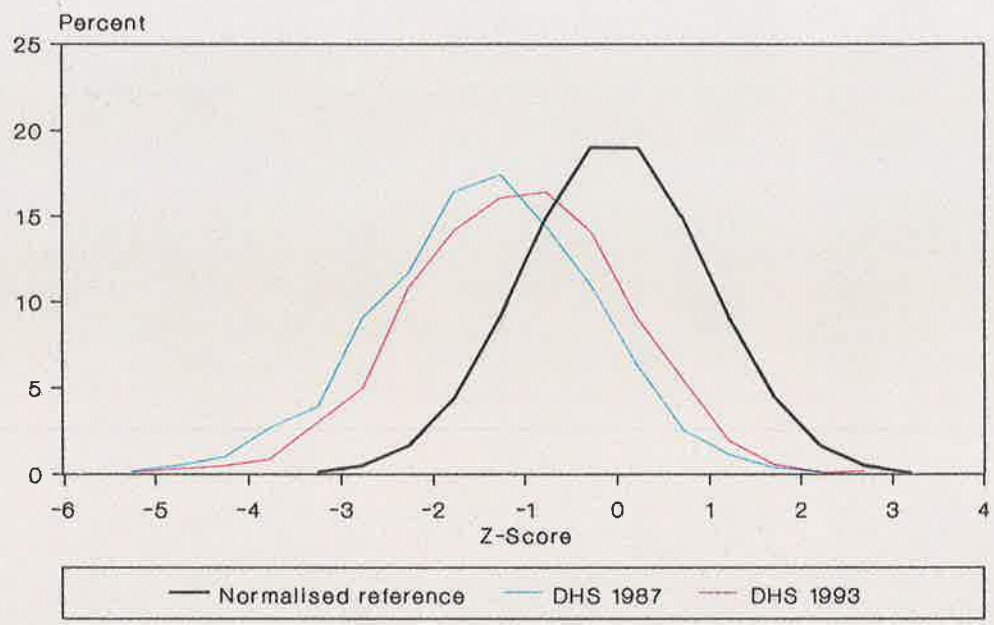
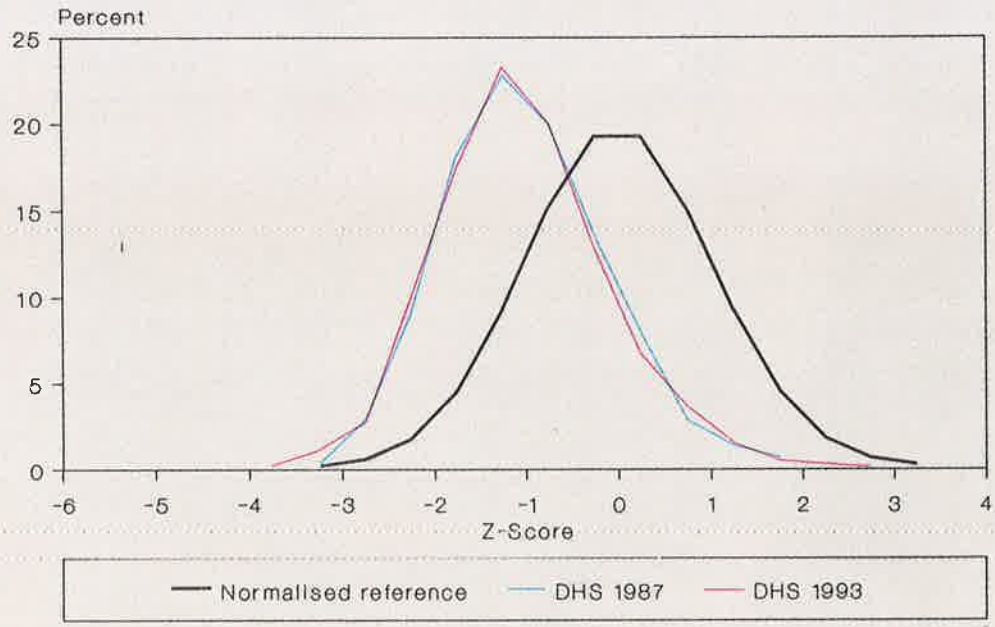


Figure 7.10 - DISTRIBUTION OF WEIGHT-FOR-HEIGHT FOR DHS 1987 AND DHS 1993 IN RELATION TO REFERENCE POPULATION (3-36 MONTHS)



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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

APPENDIX A

ESTIMATES OF SAMPLING ERRORS

The computer package CLUSTERS, developed by the International Statistical Institute for the World Fertility Survey, was used to assist in computing the sampling errors with the proper statistical methodology. The CLUSTERS package treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r.x_{hi} \text{ , and } z_h = y_h - r.x_h$$

where
- h represents the stratum which varies from 1 to H,
- m_h is the total number of enumeration areas (EAs) selected in the h^{th} stratum,
- y_{hi} is the sum of the values of variable y in EA i in the h^{th} stratum,
- x_{hi} is the sum of the number of cases (women) in EA i in the h^{th} stratum, and
- f is the overall sampling fraction, which is so small that CLUSTERS ignores it.

In addition to the standard errors, CLUSTERS computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Further, CLUSTERS computes ROH which is defined as

$$DEFT^2 = 1 + (\bar{b} - 1) ROH$$

where $\bar{b}$ is the average cluster size. ROH is a measure of homogeneity. A value of ROH closer to zero indicates more homogeneity in the cluster. CLUSTERS also computes the relative error which is calculated by dividing the standard error of an estimate by the magnitude of the estimate (SE/R). It removes the effect on standard error of the magnitude and scale of measurement of the estimate.

Sampling errors are presented in Table A.2-A.11 for the variables considered to be of major interest. Results are presented for the whole country, for urban and rural areas, and for the seven zones. For each variable, the type of statistic (mean, proportion) and the base population are given in Table A.1. For each variable, Tables A.2-A.11 present the value of the statistic, R, its standard error, SE, the weighted number of cases ,WN, the DEFT value, the relative standard error, SE/R and the 95 percent confidence limits R±2SE. In addition to these indicators, for the entire country ROH values are presented.

Table A.1 List of selected variables for sampling errors

Variable	Type	Base population
School attendance	Proportion	All women
Watching TV	Proportion	All women
Currently married	Proportion	All women
Children ever born	Mean	All women
Children surviving	Mean	All women
Currently pregnant	Proportion	Currently married women
Knows modern method	Proportion	Currently married women
Ever use any method	Proportion	Currently married women
Ever use traditional method	Proportion	Currently married women
Currently using any method	Proportion	Currently married women
Currently using traditional method	Proportion	Currently married women
Currently using pill	Proportion	Currently married women
Currently using female sterilization	Proportion	Currently married women
Currently using abstinence	Proportion	Currently married women
Wants more children	Proportion	Currently married women
Wants delay next child 2 or more years	Proportion	Currently married women
Ideal family size	Mean	Currently married women
Medical attention last birth	Proportion	Children under five
Received tetanus	Proportion	Children under five
Ever breastfeeding	Proportion	Children under five
Diarrhoea last 2 weeks	Proportion	Children under five
With health card	Proportion	Children 12 - 23 months
Received BCG	Proportion	Children 12 - 23 months with health card
Received DPT (3 doses)	Proportion	Children 12 - 23 months with health card
Received Polio (3 doses)	Proportion	Children 12 - 23 months with health card
Received measles	Proportion	Children 12 - 23 months with health card
Fully immunized	Proportion	Children 12 - 23 months with health card

Table A.2 Sampling errors: Entire sample

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Intra cluster correlation (ROH)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.919	0.006	6983.0	1.919	0.103	0.007	0.906	0.931
Watching TV	0.670	0.011	6983.0	1.879	0.097	0.016	0.649	0.691
Currently married	0.921	0.004	6983.0	1.108	0.009	0.004	0.914	0.929
Children ever born	2.604	0.028	6983.0	1.288	0.025	0.011	2.548	2.659
Children surviving	2.469	0.026	6983.0	1.293	0.026	0.010	2.417	2.521
Currently pregnant	0.067	0.004	6434.2	1.273	0.024	0.057	0.059	0.075
Knows modern method	0.993	0.001	6434.2	1.076	0.007	0.001	0.990	0.995
Ever use any method	0.783	0.007	6434.2	1.401	0.040	0.009	0.769	0.798
Ever use traditional method	0.449	0.010	6434.2	1.633	0.070	0.023	0.429	0.469
Currently using any method	0.663	0.008	6434.2	1.377	0.034	0.012	0.647	0.678
Currently using traditional method	0.224	0.007	6434.2	1.394	0.039	0.032	0.209	0.238
Currently using pill	0.055	0.004	6434.2	1.484	0.046	0.073	0.047	0.063
Currently using female sterilization	0.237	0.008	6434.2	1.651	0.066	0.036	0.220	0.253
Currently using abstinence	0.175	0.007	6434.2	1.429	0.040	0.037	0.162	0.188
Wants more children	0.301	0.007	6434.2	1.258	0.022	0.023	0.288	0.315
Wants delay next child 2 or more years	0.186	0.006	6434.2	1.307	0.030	0.034	0.174	0.199
Ideal family size	2.805	0.021	6434.2	1.676	0.069	0.008	2.763	2.847
Medical attention last birth	0.238	0.013	3683.7	1.900	0.189	0.055	0.212	0.264
Received tetanus	0.719	0.009	3683.7	1.298	0.049	0.013	0.701	0.738
Ever breastfeeding	0.980	0.003	3683.7	1.373	0.064	0.003	0.974	0.986
Diarrhoea last 2 weeks	0.050	0.004	3683.7	1.183	0.029	0.084	0.041	0.058
With health card	0.846	0.015	652.1	1.194	*	0.018	0.816	0.876
Received BCG	1.000	0.000	652.1	0.000	*	0.000	1.000	1.000
Received DPT (3 doses)	0.991	0.004	652.1	0.987	*	0.004	0.984	0.998
Received Polio (3 doses)	0.991	0.004	652.1	0.977	*	0.004	0.984	0.998
Received measles	0.955	0.008	652.1	1.056	*	0.009	0.938	0.972
Fully immunized	0.953	0.009	652.1	1.043	*	0.009	0.936	0.970

* ROH values are not presented as the average cluster size is small.

Table A.3 Sampling errors: Urban

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Watching TV	0.784	0.020	1381.1	1.942	0.026	0.744	0.825
Currently married	0.928	0.008	1381.1	1.203	0.009	0.912	0.944
Children ever born	2.367	0.062	1381.1	1.465	0.026	2.243	2.492
Children surviving	2.265	0.058	1381.1	1.465	0.026	2.149	2.381
Currently pregnant	0.079	0.007	1381.1	1.060	0.092	0.064	0.093
Knows modern method	0.993	0.002	1281.4	1.075	0.002	0.988	0.997
Ever use any method	0.744	0.021	1281.4	1.816	0.028	0.702	0.786
Ever use traditional method	0.417	0.026	1281.4	1.992	0.062	0.365	0.469
Currently using any method	0.633	0.018	1281.4	1.432	0.028	0.598	0.668
Currently using traditional method	0.221	0.015	1281.4	1.341	0.066	0.192	0.250
Currently using pill	0.056	0.007	1281.4	1.236	0.129	0.041	0.070
Currently using female sterilization	0.204	0.015	1281.4	1.453	0.073	0.175	0.234
Currently using abstinence	0.179	0.014	1281.4	1.468	0.080	0.150	0.208
Wants more children	0.326	0.017	1281.4	1.388	0.051	0.293	0.359
Wants delay next child 2 or more years	0.191	0.014	1281.4	1.315	0.071	0.164	0.218
Ideal family size	2.698	0.047	1281.4	1.817	0.017	2.604	2.793
Medical attention last birth	0.396	0.034	732.1	1.994	0.085	0.329	0.463
Received tetanus	0.759	0.016	732.1	1.067	0.021	0.728	0.791
Ever breastfeeding	0.980	0.005	732.1	1.118	0.006	0.969	0.990
Diarrhoea last 2 weeks	0.038	0.007	732.1	1.072	0.186	0.024	0.052
With health card	0.865	0.032	126.6	1.226	0.037	0.801	0.929
Received BCG	1.000	0.000	126.6	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.993	0.006	126.6	0.933	0.007	0.980	1.006
Received Polio (3 doses)	0.993	0.006	126.6	0.933	0.007	0.980	1.006
Received measles	0.960	0.018	126.6	1.107	0.019	0.923	0.996
Fully immunized	0.960	0.018	126.6	1.107	0.019	0.923	0.996

Table A.4 Sampling errors: Rural

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits	
						R-2SE	R+2SE
Watching TV	0.642	0.012	5601.9	1.895	0.019	0.617	0.666
Currently married	0.920	0.004	5601.9	1.091	0.004	0.912	0.928
Children ever born	2.662	0.031	5601.9	1.273	0.012	2.599	2.725
Children surviving	2.519	0.029	5601.9	1.279	0.012	2.461	2.578
Currently pregnant	0.064	0.004	5601.9	1.317	0.068	0.055	0.073
Knows modern method	0.992	0.001	5152.9	1.073	0.001	0.990	0.995
Ever use any method	0.793	0.007	5152.9	1.255	0.009	0.779	0.807
Ever use traditional method	0.457	0.011	5152.9	1.528	0.024	0.435	0.478
Currently using any method	0.670	0.009	5152.9	1.358	0.013	0.653	0.688
Currently using traditional method	0.224	0.008	5152.9	1.401	0.037	0.208	0.241
Currently using pill	0.055	0.005	5152.9	1.530	0.086	0.046	0.065
Currently using female sterilization	0.245	0.010	5152.9	1.688	0.040	0.225	0.264
Currently using abstinence	0.174	0.007	5152.9	1.421	0.042	0.160	0.189
Wants more children	0.295	0.008	5152.9	1.222	0.026	0.280	0.310
Wants delay next child 2 or more years	0.185	0.007	5152.9	1.303	0.039	0.171	0.199
Ideal family size	2.831	0.024	5152.9	1.665	0.008	2.783	2.879
Medical attention last birth	0.199	0.013	2951.6	1.763	0.065	0.173	0.224
Received tetanus	0.710	0.011	2951.6	1.313	0.015	0.688	0.731
Ever breastfeeding	0.980	0.004	2951.6	1.423	0.004	0.973	0.988
Diarrhoea last 2 weeks	0.053	0.005	2951.6	1.209	0.094	0.043	0.063
With health card	0.841	0.017	525.5	1.187	0.021	0.806	0.876
Received BCG	1.000	0.000	525.5	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.991	0.004	525.5	0.994	0.004	0.982	0.999
Received Polio (3 doses)	0.990	0.004	525.5	0.982	0.004	0.982	0.999
Received measles	0.954	0.010	525.5	1.043	0.010	0.935	0.973
Fully immunized	0.952	0.010	525.5	1.027	0.010	0.932	0.971

Table A.5 Sampling errors: Zone 1

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.959	0.011	855.2	1.779	0.012	0.936	0.981
Watching TV	0.855	0.016	855.2	1.429	0.019	0.823	0.888
Currently married	0.928	0.010	855.2	1.220	0.011	0.907	0.948
Children ever born	2.195	0.065	855.2	1.327	0.030	2.064	2.326
Children surviving	2.093	0.059	855.2	1.288	0.028	1.976	2.210
Currently pregnant	0.078	0.008	793.3	0.950	0.105	0.061	0.094
Knows modern method	0.992	0.003	793.3	1.035	0.003	0.986	0.998
Ever use any method	0.755	0.021	793.3	1.445	0.028	0.713	0.796
Ever use traditional method	0.468	0.029	793.3	1.712	0.061	0.411	0.525
Currently using any method	0.635	0.019	793.3	1.206	0.029	0.598	0.673
Currently using traditional method	0.251	0.017	793.3	1.140	0.066	0.218	0.284
Currently using pill	0.062	0.009	793.3	1.144	0.143	0.044	0.080
Currently using female sterilization	0.183	0.020	793.3	1.568	0.107	0.144	0.222
Currently using abstinence	0.208	0.016	793.3	1.237	0.078	0.175	0.240
Wants more children	0.329	0.017	793.3	1.126	0.052	0.295	0.363
Wants delay next child 2 or more years	0.188	0.012	793.3	0.905	0.063	0.164	0.211
Ideal family size	2.609	0.034	793.3	1.064	0.013	2.541	2.677
Medical attention last birth	0.427	0.033	422.4	1.462	0.078	0.361	0.494
Received tetanus	0.786	0.021	422.4	1.113	0.027	0.744	0.828
Ever breastfeeding	0.983	0.007	422.4	1.179	0.007	0.969	0.997
Diarrhoea last 2 weeks	0.034	0.010	422.4	1.185	0.291	0.014	0.053
With health card	0.855	0.035	78.7	1.010	0.041	0.785	0.925
Received BCG	1.000	0.000	78.7	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.989	0.010	78.7	0.898	0.010	0.969	1.009
Received Polio (3 doses)	0.989	0.010	78.7	0.898	0.010	0.969	1.009
Received measles	0.944	0.028	78.7	1.130	0.029	0.888	0.999
Fully immunized	0.944	0.028	78.7	1.130	0.029	0.888	0.999

Table A.6 Sampling errors: Zone 2

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.974	0.007	1113.8	1.209	0.007	0.959	0.988
Watching TV	0.758	0.024	1113.8	1.558	0.032	0.709	0.807
Currently married	0.942	0.008	1113.8	0.908	0.008	0.926	0.957
Children ever born	2.284	0.052	1113.8	0.957	0.023	2.181	2.388
Children surviving	2.201	0.051	1113.8	0.983	0.023	2.100	2.302
Currently pregnant	0.060	0.009	1049.0	1.069	0.155	0.041	0.078
Knows modern method	0.993	0.003	1049.0	0.974	0.003	0.987	0.999
Ever use any method	0.864	0.018	1049.0	1.377	0.021	0.828	0.899
Ever use traditional method	0.596	0.019	1049.0	1.036	0.032	0.557	0.634
Currently using any method	0.709	0.019	1049.0	1.168	0.027	0.670	0.748
Currently using traditional method	0.299	0.025	1049.0	1.430	0.082	0.250	0.348
Currently using pill	0.049	0.006	1049.0	0.711	0.114	0.038	0.060
Currently using female sterilization	0.193	0.020	1049.0	1.387	0.103	0.153	0.233
Currently using abstinence	0.209	0.019	1049.0	1.314	0.093	0.170	0.248
Wants more children	0.275	0.017	1049.0	1.066	0.063	0.240	0.310
Wants delay next child 2 or more years	0.159	0.015	1049.0	1.096	0.095	0.129	0.189
Ideal family size	2.525	0.045	1049.0	1.271	0.018	2.435	2.615
Medical attention last birth	0.240	0.029	533.3	1.306	0.122	0.182	0.299
Received tetanus	0.768	0.020	533.3	0.879	0.025	0.729	0.807
Ever breastfeeding	0.994	0.004	533.3	1.024	0.004	0.986	1.002
Diarrhoea last 2 weeks	0.058	0.014	533.3	1.146	0.243	0.030	0.086
With health card	0.955	0.028	94.3	1.117	0.030	0.898	1.012
Received BCG	1.000	0.000	94.3	0.000	0.000	1.000	1.000
Received DPT (3 doses)	1.000	0.000	94.3	0.000	0.000	1.000	1.000
Received Polio (3 doses)	1.000	0.000	94.3	0.000	0.000	1.000	1.000
Received measles	0.984	0.016	94.3	1.007	0.016	0.953	1.016
Fully immunized	0.984	0.016	94.3	1.007	0.016	0.953	1.016

Table A.7 Sampling errors: Zone 3

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits	
						R-2SE	R+2SE
School attendance	0.937	0.016	940.5	1.858	0.017	0.906	0.969
Watching TV	0.612	0.028	940.5	1.661	0.046	0.556	0.668
Currently married	0.925	0.010	940.5	1.094	0.011	0.905	0.945
Children ever born	2.664	0.085	940.5	1.383	0.032	2.495	2.834
Children surviving	2.538	0.081	940.5	1.384	0.032	2.376	2.699
Currently pregnant	0.070	0.011	870.1	1.267	0.161	0.048	0.092
Knows modern method	0.996	0.002	870.1	0.997	0.002	0.992	1.001
Ever use any method	0.761	0.017	870.1	1.098	0.022	0.728	0.795
Ever use traditional method	0.488	0.021	870.1	1.170	0.043	0.445	0.530
Currently using any method	0.645	0.022	870.1	1.342	0.035	0.601	0.690
Currently using traditional method	0.274	0.013	870.1	0.799	0.047	0.248	0.299
Currently using pill	0.043	0.009	870.1	1.261	0.206	0.026	0.061
Currently using female sterilization	0.173	0.015	870.1	1.123	0.085	0.143	0.202
Currently using abstinence	0.187	0.013	870.1	0.967	0.070	0.161	0.213
Wants more children	0.297	0.019	870.1	1.195	0.064	0.259	0.335
Wants delay next child 2 or more years	0.201	0.017	870.1	1.191	0.086	0.166	0.235
Ideal family size	2.714	0.069	870.1	1.933	0.025	2.576	2.851
Medical attention last birth	0.227	0.033	510.5	1.660	0.145	0.161	0.293
Received tetanus	0.667	0.032	510.5	1.454	0.048	0.602	0.732
Ever breastfeeding	0.975	0.009	510.5	1.210	0.009	0.958	0.993
Diarrhoea last 2 weeks	0.053	0.010	510.5	0.909	0.181	0.034	0.073
With health card	0.884	0.041	99.8	1.295	0.047	0.801	0.966
Received BCG	1.000	0.000	99.8	0.000	0.000	1.000	1.000
Received DPT (3 doses)	1.000	0.000	99.8	0.000	0.000	1.000	1.000
Received Polio (3 doses)	1.000	0.000	99.8	0.000	0.000	1.000	1.000
Received measles	0.977	0.016	99.8	1.000	0.016	0.945	1.009
Fully immunized	0.977	0.016	99.8	1.000	0.016	0.945	1.009

Table A.8 Sampling errors: Zone 4

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.915	0.019	1470.3	1.978	0.020	0.878	0.952
Watching TV	0.638	0.029	1470.3	1.778	0.045	0.580	0.696
Currently married	0.900	0.008	1470.3	0.791	0.009	0.884	0.916
Children ever born	2.610	0.050	1470.3	0.826	0.019	2.510	2.711
Children surviving	2.481	0.048	1470.3	0.841	0.019	2.386	2.576
Currently pregnant	0.057	0.010	1323.4	1.317	0.181	0.036	0.077
Knows modern method	0.996	0.002	1323.4	0.994	0.002	0.992	1.001
Ever use any method	0.801	0.016	1323.4	1.139	0.020	0.769	0.833
Ever use traditional method	0.520	0.033	1323.4	1.856	0.063	0.454	0.586
Currently using any method	0.679	0.020	1323.4	1.245	0.029	0.640	0.718
Currently using traditional method	0.247	0.021	1323.4	1.366	0.085	0.205	0.289
Currently using pill	0.068	0.015	1323.4	1.746	0.218	0.038	0.098
Currently using female sterilization	0.228	0.025	1323.4	1.760	0.109	0.178	0.278
Currently using abstinence	0.221	0.019	1323.4	1.336	0.084	0.184	0.259
Wants more children	0.309	0.018	1323.4	1.161	0.059	0.273	0.345
Wants delay next child 2 or more years	0.201	0.020	1323.4	1.421	0.101	0.160	0.241
Ideal family size	2.802	0.052	1323.4	1.569	0.019	2.698	2.907
Medical attention last birth	0.217	0.030	744.3	1.550	0.139	0.157	0.278
Received tetanus	0.697	0.027	744.3	1.254	0.039	0.643	0.752
Ever breastfeeding	0.980	0.011	744.3	1.643	0.011	0.958	1.002
Diarrhoea last 2 weeks	0.040	0.010	744.3	1.085	0.251	0.020	0.061
With health card	0.805	0.039	120.2	0.907	0.048	0.727	0.882
Received BCG	1.000	0.000	120.2	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.986	0.015	120.2	1.049	0.015	0.957	1.015
Received Polio (3 doses)	0.986	0.015	120.2	1.049	0.015	0.957	1.015
Received measles	0.944	0.025	120.2	0.937	0.027	0.893	0.995
Fully immunized	0.944	0.025	120.2	0.937	0.027	0.893	0.995

Table A.9 Sampling errors: Zone 5

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.849	0.018	1359.3	1.757	0.021	0.813	0.885
Watching TV	0.563	0.027	1359.3	1.879	0.048	0.509	0.616
Currently married	0.921	0.010	1359.3	1.257	0.011	0.902	0.941
Children ever born	2.736	0.087	1359.3	1.639	0.032	2.562	2.910
Children surviving	2.553	0.080	1359.3	1.655	0.031	2.394	2.712
Currently pregnant	0.064	0.009	1252.5	1.281	0.141	0.046	0.082
Knows modern method	0.988	0.002	1252.5	0.700	0.002	0.983	0.992
Ever use any method	0.719	0.017	1252.5	1.252	0.024	0.685	0.753
Ever use traditional method	0.219	0.015	1252.5	1.238	0.070	0.189	0.250
Currently using any method	0.637	0.014	1252.5	1.008	0.022	0.610	0.665
Currently using traditional method	0.111	0.013	1252.5	1.391	0.118	0.085	0.138
Currently using pill	0.043	0.008	1252.5	1.344	0.181	0.028	0.059
Currently using female sterilization	0.333	0.020	1252.5	1.455	0.059	0.294	0.373
Currently using abstinence	0.095	0.013	1252.5	1.497	0.133	0.070	0.120
Wants more children	0.289	0.017	1252.5	1.270	0.057	0.256	0.322
Wants delay next child 2 or more years	0.159	0.013	1252.5	1.183	0.082	0.133	0.185
Ideal family size	2.914	0.053	1252.5	1.880	0.018	2.807	3.021
Medical attention last birth	0.263	0.038	760.0	2.280	0.146	0.186	0.339
Received tetanus	0.721	0.017	760.0	0.990	0.024	0.687	0.755
Ever breastfeeding	0.967	0.007	760.0	0.963	0.007	0.954	0.981
Diarrhoea last 2 weeks	0.040	0.008	760.0	1.062	0.200	0.024	0.056
With health card	0.789	0.044	123.8	1.273	0.055	0.701	0.876
Received BCG	1.000	0.000	123.8	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.991	0.006	123.8	0.697	0.006	0.979	1.004
Received Polio (3 doses)	0.991	0.006	123.8	0.697	0.006	0.979	1.004
Received measles	0.936	0.024	123.8	1.012	0.026	0.888	0.984
Fully immunized	0.936	0.024	123.8	1.012	0.026	0.888	0.984

Table A.10 Sampling errors: Zone 6

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.924	0.010	446.8	1.179	0.011	0.904	0.943
Watching TV	0.649	0.027	446.8	1.831	0.042	0.595	0.703
Currently married	0.928	0.011	446.8	1.334	0.012	0.906	0.949
Children ever born	3.025	0.049	446.8	0.842	0.016	2.926	3.123
Children surviving	2.857	0.043	446.8	0.796	0.015	2.770	2.943
Currently pregnant	0.080	0.012	414.5	1.388	0.146	0.057	0.103
Knows modern method	0.996	0.003	414.5	1.433	0.003	0.990	1.002
Ever use any method	0.824	0.019	414.5	1.568	0.023	0.786	0.863
Ever use traditional method	0.408	0.016	414.5	0.988	0.038	0.376	0.439
Currently using any method	0.669	0.025	414.5	1.717	0.038	0.618	0.719
Currently using traditional method	0.161	0.015	414.5	1.241	0.091	0.132	0.190
Currently using pill	0.065	0.007	414.5	0.874	0.103	0.051	0.078
Currently using female sterilization	0.286	0.025	414.5	1.782	0.087	0.236	0.336
Currently using abstinence	0.120	0.013	414.5	1.310	0.110	0.093	0.146
Wants more children	0.297	0.024	414.5	1.715	0.082	0.248	0.345
Wants delay next child 2 or more years	0.201	0.022	414.5	1.697	0.109	0.158	0.245
Ideal family size	3.191	0.055	414.5	1.509	0.017	3.082	3.301
Medical attention last birth	0.132	0.018	268.6	1.330	0.135	0.097	0.168
Received tetanus	0.650	0.023	268.6	1.240	0.036	0.603	0.696
Ever breastfeeding	0.989	0.004	268.6	1.068	0.004	0.980	0.998
Diarrhoea last 2 weeks	0.064	0.015	268.6	1.552	0.235	0.034	0.094
With health card	0.824	0.033	41.7	0.972	0.041	0.757	0.891
Received BCG	1.000	0.000	41.7	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.971	0.017	41.7	1.022	0.018	0.936	1.005
Received Polio (3 doses)	0.971	0.017	41.7	1.022	0.018	0.936	1.005
Received measles	0.955	0.023	41.7	1.077	0.024	0.909	0.000
Fully immunized	0.929	0.027	41.7	1.047	0.029	0.875	0.983

Table A.11 Sampling errors: Zone 7

Variable	Value (R)	Standard error (SE)	Weighted number (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
School attendance	0.898	0.014	797.1	1.676	0.016	0.870	0.926
Watching TV	0.671	0.023	797.1	1.766	0.034	0.625	0.717
Currently married	0.918	0.008	797.1	1.055	0.009	0.902	0.934
Children ever born	2.941	0.073	797.1	1.221	0.025	2.794	3.088
Children surviving	2.784	0.068	797.1	1.225	0.024	2.648	2.920
Currently pregnant	0.079	0.008	731.4	1.120	0.106	0.062	0.096
Knows modern method	0.987	0.006	731.4	1.750	0.006	0.976	0.999
Ever use any method	0.779	0.021	731.4	1.783	0.028	0.736	0.821
Ever use traditional method	0.460	0.022	731.4	1.516	0.048	0.416	0.504
Currently using any method	0.659	0.027	731.4	2.057	0.041	0.605	0.713
Currently using traditional method	0.212	0.011	731.4	0.927	0.052	0.190	0.233
Currently using pill	0.062	0.008	731.4	1.149	0.124	0.047	0.077
Currently using female sterilization	0.253	0.024	731.4	1.976	0.094	0.205	0.300
Currently using abstinence	0.163	0.012	731.4	1.214	0.076	0.138	0.187
Wants more children	0.323	0.015	731.4	1.176	0.047	0.293	0.354
Wants delay next child 2 or more years	0.219	0.011	731.4	0.948	0.052	0.196	0.242
Ideal family size	3.116	0.060	731.4	1.758	0.019	2.996	3.237
Received tetanus	0.735	0.018	444.5	1.148	0.025	0.698	0.771
Ever breastfeeding	0.982	0.005	444.5	0.985	0.005	0.973	0.992
Diarrhoea last 2 weeks	0.075	0.012	444.5	1.299	0.164	0.051	0.100
With health card	0.847	0.029	93.6	1.074	0.035	0.789	0.906
Received BCG	1.000	0.000	93.6	0.000	0.000	1.000	1.000
Received DPT (3 doses)	0.989	0.009	93.6	1.063	0.009	0.971	1.007
Received Polio (3 doses)	0.988	0.009	93.6	1.004	0.009	0.969	1.006
Received measles	0.951	0.011	93.6	0.628	0.012	0.928	0.973
Fully immunized	0.949	0.011	93.6	0.629	0.012	0.926	0.972

APPENDIX B

STAFF INVOLVED IN DEMOGRAPHIC AND HEALTH SURVEY 1993

APPENDIX B

STAFF INVOLVED IN DEMOGRAPHIC AND HEALTH SURVEY 1993

Project Director	-	Mr. A.G.W. Nanayakkara, Director, Department of Census and Statistics
	-	Mr. A.A.D.C. Yasasiri, Director, Department of Census and Statistics (until January 1994)
Project Manager	-	Mr. H.R. Gunasekera, Deputy Director, Department of Census and Statistics

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Mr. A.A.D.C. Yasasiri (until January 1994)	-	Director, Department of Census and Statistics (Chairman)
Dr. A.T.P.L. Abeykoon	-	Director, Population Division, Ministry of Health, Highways and Social Services (Member)
Mr. H.R. Gunasekera	-	Deputy Director, Department of Census and Statistics (Member)
Mrs. S. Ukwatta	-	Statistician, Department of Census and Statistics (Member)

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Mr. H.R. Gunasekera (Deputy Director)
Mr. G.Y.L. Fernando (Deputy Director)
Mr. A.M.U. Dissanayaka (Deputy Director)
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Mrs. H.A. Wimalawathi (Interviewer)
Mrs. W.W.C.M. Mendis (Interviewer)
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Mrs. Soma Kumarage (Interviewer)
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Mrs. A. Wijekoon (Interviewer)
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Mr. U.R. Upali Jayaweera (Officer in Charge)

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APPENDIX C

QUESTIONNAIRES

Department of Census and Statistics of Sri Lanka
Demographic and Health Survey

Household Schedule

Identification	
Zone (Sample stratum):	..... ☐☐
District:	..... ☐☐
Sector (Urban/Rural/Estate):	..... ☐
PSU (Ward/GN Div/Estate):	..... ☐☐
SSU (Survey block number):	..... ☐
Housing unit number:	..... ☐☐☐
Household number:	..... ☐
For office use:	..... ☐☐

Interviewer visits				
	1	2	3	Final visit
Date:	.....	.....	.....	Month ☐☐ Year ☐☐
Interviewer's name:	.....	.....	.....	☐☐
Result *:	.....	.....	.....	☐
Next visit: Date	.....	.....		Total no. of visits
Time	.....	.....		☐

* RESULT CODES
1. Completed
2. HH present but no competent respondent at home
3. Nobody at home
4. Postponed
5. Refused
6. Dwelling vacant/address not a dwelling
7. Dwelling destroyed
8. Dwelling not found
9. Other (Specify) .....

	Field edited by	Office edited by	Keyed by	Keyed by
Name:	.....	.....	.....	☐☐
Date:	.....	.....	.....	

NOW WE WOULD LIKE SOME INFORMATION ABOUT THE PEOPLE WHO USUALLY LIVE IN YOUR HOSEHOLD OR WHO ARE STAYING WITH YOU NOW.

NAME		RELATION SHIP	RESIDENCE				SEX		AGE	MARITAL STATUS			ELIGIBILITY
Please give me the names of the persons who usually live in your household and who are staying with you now. (RECORD NAME OF HEAD OF HOUSEHOLD FIRST)		(NAME) what is the relation ship to head of household?	Does (NAME) usually live here?		Did (NAME) sleep here last night?		Is (NAME) male or female?		How old is he/ she?	Formerly married (F) 1 Currently married (C) 2 Never married (N) 3			CIRCLE LINE NUMBER OF WOMEN ELIGIBLE FOR INDIVIDUAL INTERVIEW
(1)		(2)	(3)		(4)		(5)		(6)	(7)			(8)
LINE NO.	NAME	CODE NO.	YES	NO	YES	NO	M	F	IN YEARS	F	C	N	LINE NO.
01			1	2	1	2	1	2		1	2	3	01
02			1	2	1	2	1	2		1	2	3	02
03			1	2	1	2	1	2		1	2	3	03
04			1	2	1	2	1	2		1	2	3	04
05			1	2	1	2	1	2		1	2	3	05
06			1	2	1	2	1	2		1	2	3	06
07			1	2	1	2	1	2		1	2	3	07
08			1	2	1	2	1	2		1	2	3	08
09			1	2	1	2	1	2		1	2	3	09
10			1	2	1	2	1	2		1	2	3	10
11			1	2	1	2	1	2		1	2	3	11
12			1	2	1	2	1	2		1	2	3	12
13			1	2	1	2	1	2		1	2	3	13

14			1	2	1	2	1	2		1	2	3	14
15			1	2	1	2	1	2		1	2	3	15
16			1	2	1	2	1	2		1	2	3	16
17			1	2	1	2	1	2		1	2	3	17
18			1	2	1	2	1	2		1	2	3	18
19			1	2	1	2	1	2		1	2	3	19
20			1	2	1	2	1	2		1	2	3	20
21			1	2	1	2	1	2		1	2	3	21
22			1	2	1	2	1	2		1	2	3	22
23			1	2	1	2	1	2		1	2	3	23
24			1	2	1	2	1	2		1	2	3	24

WOMAN IS ELIGIBLE IF COL. (4) = 1, (5) = 2, (6) = 15 - 49, (7) = 1 or 2.

Total No. of eligible women on this sheet. ☐☐

1. Are there any other persons such as small children or infants that we have not listed? Yes ☐ ➡ (CORRECT AND ENTER NAMES IN TABLE) ☐ No

2. In addition, are there any other people who usually live here but are not members of your family, such as domestic servants, lodgers or friends whom we have not listed? Yes ☐ ➡ (CORRECT AND ENTER NAMES IN TABLE) ☐ No

3. Are there any guests or visitors who are temporarily staying with the family and who spent last night here that are not listed? Yes ☐ ➡ (CORRECT AND ENTER NAMES IN TABLE) ☐ No

CODES FOR RELATIONSHIP TO HEAD OF HOUSEHOLD

Head of household	01
Husband/ wife	02
Son/ daughter	03
Son-in-law/ daughter -in -law	04
Grand son/ grand daughter	05
Parents	06
Grand father/ grand mother	07
Brother/ sister	08
Other relative	09
Adopted child	10
Visitor	11
Other (Specify)	12

Department of Census and Statistics of Sri Lanka
Demographic and Health Survey

Individual Questionnaire

Identification	
Zone (Sample stratum):	.....
District:	.....
Sector (Urban/Rural/Estate):	.....
PSU (Ward/GN Div/Estate):	.....
SSU (Survey block number):	.....
Housing unit number:	.....
Household number:	.....
Line number of eligible woman:	.....

Interviewer visits				
	1	2	3	Final visit
Date:	.....	.....	.....	Month ☐☐ Year ☐☐
Interviewer's name:	.....	.....	.....	☐☐
Result *:	.....	.....	.....	☐
Next visit: Date	.....	.....		Total no. of visits
Time	.....	.....		☐

* RESULT CODES
1. Completed
2. Not at home
3. Postponed
4. Refused
5. Partly completed
6. Other (Specify) .....

	Field edited by	Office edited by	Keyed by	Keyed by
Name	.....	.....	.....	☐☐
Date	.....	.....	.....	

Section 1: Respondent's background

No.	Questions and filters	Coding categories
101	RECORD NUMBER OF PEOPLE LISTED IN THE HOUSEHOLD SCHEDULE	Number of people ☐☐
102	RECORD NUMBER OF CHILDREN AGE 5 AND UNDER LISTED IN THE HOUSEHOLD AND WHO USUALLY LIVE IN THE HOUSEHOLD.	Number of children age 5 and under ☐☐
103	INTERVIEWER: NOW RECORD THE TIME IN 24 HOURS TIME.	Hour..... ☐☐ Minutes..... ☐☐
104	First I would like to ask some questions about yourself and your household. For most of the time until you were 12 years old, did you live in an urban area, in a village, or on an estate. SEE INSIDE OF THE BACK LOVER PAGE FOR THE AREAS OF COLOMBO METROPOLITAN	Colombo metro..... 1 Other urban..... 2 Rural..... 3 Estate..... 4 Abroad..... 5
105	How long have you been living continuously in this urban area/ village/ estate?	Always..... 95 Visitor..... 96 Years..... ☐☐
106	In what month and year were you born? OBTAIN THE MONTH AND YEAR ACCURATELY	Month..... ☐☐ Year..... ☐☐
107	How old were you at last birthday? COMPARE AND CORRECT 106 AND/ OR 107 IF INCONSISTENT	CHECK AGE DETERMINATION CARD Age in Completed years ☐☐
108	Have you ever attended school?	Yes..... 1 No..... 2 ➡ **Go to 112.**
109	What was the highest grade in school you completed? (CIRCLE BOTH LEVEL AND GRADE.)	Primary 1 00 01 02 03 04 05 ➡ Secondary 2 06 07 08 09 **Go to 111.** Higher 3 10 11 12

No.	Questions and filters	Coding categories
110	What was the highest exam you passed?	G.C.E. O/Level..... 1 G.C.E. A/Level..... 2 University degree..... 3 Technical/ professional..... 4 Other (specify)..... 5 None..... 6
111	CHECK 109 AND '✓' THE CORRECT BOX PRIMARY ☐ SECONDARY OR HIGHER ☐ ➡ Go to 114.	
112	Can you read a letter or newspaper easily, with difficulty, or not at all?	Easily..... 1 With difficulty..... 2 Not at all..... 3 ➡ Go to 114.
113	How often do you read newspapers?	Regulary..... 1 Seldom..... 2 Never..... 3
114	How often do you watch television?	Regulary..... 1 Seldom..... 2 Never..... 3
115	How often do you listen to the radio?	Regulary..... 1 Seldom..... 2 Never..... 3
116	From whom do you usually get advice on health matters?	Doctor - Ayurvedic..... 1 Doctor - Western..... 2 Family Health Worker..... 3 Clinic/Hospital..... 4 Health Volunteers..... 5 Not taken advice..... 6 Other (Specify)..... 7

No.	Questions and filters	Coding categories
117	What is the major source of drinking water for members of your household?	Piped into residence..... 01 Piped into premises..... 02 Public tap (street tap)..... 03 Tube well/abesin. pump..... 04 Protected well..... 05 Unprotected well..... 06 River/Canal/Tank/Spring Water.. 07 Rain water..... 08 Other (Specify) 09
118	Whether boiled water is used for drinking in the household?	Yes..... 1 No..... 2
119	What kind of toilet facility is available for use by members of this household?	Flush..... 1 Water seal..... 2 Pit..... 3 Bucket..... 4 Other ..... 5 (specify) None..... 6 ➡ **Go to 121.**
120	Is this facility for the exclusive use of members of this household, or is it shared?	Household members only... 1 Shared with others..... 2
121	Do you usually wash your hands with soap after using the toilet?	Yes..... 1 No..... 2

No.	Questions and filters	Coding categories
122	Does your house have the following?	Yes No
	Electricity	Electricity..... 1 2
	A radio	Radio..... 1 2
	A television	Television..... 1 2
	A refrigerator	Refrigerator..... 1 2
	Does any member of your household own the following?	Yes No
	A bicycle	Bicycle..... 1 2
	A motorcycle	Motorcycle..... 1 2
	A car	Car..... 1 2
	A van	Van..... 1 2
	A tractor	Tractor..... 1 2
123	MAIN MATERIAL OF THE FLOOR (INTERVIEWER: RECORD OBSERVATION)	Terrazzo/ Floor tile..... 1 Cement..... 2 Wood..... 3 Dung/ Mud..... 4 Sand..... 5 Other (specify)..... 6
124	MAIN MATERIAL OF THE ROOF (INTERVIEWER: RECORD OBSERVATION)	Tile..... 1 Asbestos..... 2 Tin sheets..... 3 Cadjan/Palmyrah/Straw..... 4 Waste materials..... 5 Other (specify)..... 6
125	MAIN MATERIAL OF THE WALLS (INTERVIEWER: RECORD OBSERVATION)	Brick/Cement/Stone/Cabook..... 1 Mud..... 2 Wood..... 3 Cadjan/Palmyrah..... 4 Other (specify)..... 5

No.	Questions and filters	Coding categories
126	What religion do you belong to?	Buddhist..... 1 Hindu..... 2 Muslim..... 3 Roman Catholic..... 4 Other christian..... 5 Other (specify)..... 6
127	What is your ethnicity?	Sinhalese..... 1 Sri Lanka Tamil..... 2 Indian Tamil..... 3 Sri Lanka Moor..... 4 Burgher..... 5 Malay..... 6 Other (specify)..... 7

Section 2: Reproduction

No.	Questions and filters	Coding categories
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	Yes..... 1 No..... 2 ➡ **Go to 206.**
202	Do you have any son or daughter you have given birth to who is now living with you?	Yes..... 1 No..... 2 ➡ **Go to 204.**
203	How many sons live with you? And how many daughters live with you? (IF NONE ENTER "00".)	Sons at home ☐☐ Daughters at home ☐☐
204	Do you have any son or daughter you have given birth to who is alive but does not live with you?	Yes..... 1 No..... 2 ➡ **Go to 206.**
205	How many sons live elsewhere? How many daughters live elsewhere? (IF NONE ENTER "00".)	Sons elsewhere ☐☐ Daughters elsewhere ☐☐
206	Have you ever given birth to a boy or a girl who was born alive but later died? IF NO, PROBE: Any (Other) boy or girl who cried or showed any sign of life but only survived a few hours or days?	Yes..... 1 No..... 2 ➡ **Go to 208.**
207	How many boys have died? How many girls have died? (IF NONE ENTER "00".)	Boys dead ☐☐ Girls dead ☐☐
208	SUM ANSWERS TO 203, 205, 207 AND ENTER TOTAL. (IF NONE ENTER "00".)	Total..... ☐☐

No.	Questions and filters	Coding categories
209	CHECK 208 Just to make sure that I have this right: You have had in total..... live births during your life. Is that correct? ☐ Yes ☐ No ➡ PROBE AND CORRECT 201-209 AS NECESSARY	
210	CHECK 208 ☐ ONE OR MORE LIVE BIRTHS ☐ NO LIVE BIRTHS ➡ **Go to 220.**	

Go to next page.

211 Now I would like to talk to you about all of your births. It is important that you begin with your first birth and then report subsequent births in the order that they occured. Now, please tell me the name of your first birth.

INTERVIEWER: FIRST, RECORD THE NAMES OF ALL BIRTHS THE WOMAN MENTIONS BY PROGRESSING DOWN COLUMN 212. SECOND, CIRCLE THE APPROPRIATE CODE IN Q212A. IF MULTIPLE BIRTH, ENTER THEM ON THE ADJOINING ROWS. THEN, ASK Q213-218 FOR EACH BIRTH.

212 What is the name of your (FIRST, SECOND, etc.,) birth?	212A Record single or multiple birth status.	213 Is (NAME) a boy or a girl?	214 In what month and year was (NAME) born?	215 Is (NAME) still alive?	216 IF DEAD How old was (NAME) when he/ she died? (RECORD, DAYS IF LESS THAN ONE MONTH, MONTHS IF MORE THAN ONE MONTH AND LESS THAN 2 YEARS OR YEARS IF 2 OR MORE YEARS.)	217 IF ALIVE: How old was (NAME) at his/her last birthday?	218 IF ALIVE Is (NAME) living with you now?
01 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
02 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
03 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
04 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
05 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
06 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
07 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2

219

TICK "✓" HERE IF CONTINUATION SHEET IS USED ☐ ➡ PROCEED TO NEXT PAGE.

COMPARE 208 WITH NUMBERS OF BIRTHS IN HISTORY ABOVE AND MARK CORRECT BOX WITH AN "✓"

NUMBERS ARE SAME ☐ NUMBERS ARE DIFFERENT ☐ (PROBE AND RECONCILE)

INTERVIEWER:

FOR EACH LIVE BIRTH: YEAR OF BIRTH IS RECORDED ☐

FOR EACH LIVE CHILD: CURRENT AGE IS RECORDED ☐

FOR EACH DEAD CHILD AGE AT DEATH IS RECORDED ☐

Continuation sheet

212 What is the name of your (FIRST, SECOND, etc.,) birth?	212A Record single or multiple birth status.	213 Is (NAME) a boy or a girl?	214 In what month and year was (NAME) born?	215 Is (NAME) still alive?	216 IF DEAD How old was (NAME) when he/ she died? (RECORD, DAYS IF LESS THAN ONE MONTH, MONTHS IF MORE THAN ONE MONTH AND LESS THAN 2 YEARS OR YEARS IF 2 OR MORE YEARS.)	217 IF ALIVE: How old was (NAME) at his/her last birthday?	218 IF ALIVE Is (NAME) living with you now?
08 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
09 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
10 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
11 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
12 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
13 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO NEXT BIRTH)	Age in years ☐☐	Yes 1 No 2
14 ..... (Name)	Single 1 Multi 2	Boy 1 Girl 2	Month ☐☐ Year ☐☐	Yes 1 Go to 217. No 2	Days 1 Months 2 Years 3 ☐☐ (GO TO 219)	Age in years ☐☐	Yes 1 No 2

219	COMPARE 208 WITH NUMBERS OF BIRTH IN HISTORY ABOVE AND MARK CORRECT BOX WITH AN "✓"
	NUMBERS ARE SAME ☐ NUMBERS ARE DIFFERENT ☐ (PROBE AND RECONCILE)
	INTERVIEWER:
	FOR EACH LIVE BIRTH: YEAR OF BIRTH IS RECORDED ☐
	FOR EACH LIVE CHILD: CURRENT AGE IS RECORDED ☐
	FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED ☐

No.	Questions and filters.	Coding categories
220	How long ago did your last menstrual period start? INERVIEWER: CIRCLE 1 AND RECORD DAYS IF LESS THAN 7 DAYS (1 WEEK) CIRCLE 2 AND RECORD WEEKS IF MORE THAN 7 DAYS (1 WEEK) AND LESS THAN 4 WEEKS. CIRCLE 3 AND RECORD MONTHS IF MORE THAN 4 WEEKS (1 MONTH) AND LESS THAN 12 MONTHS. CIRCLE 4 AND RECORD YEARS IF MORE THAN 12 MONTHS (1 YEAR)	Days ago 1 ☐☐ Weeks ago 2 ☐☐ Months ago 3 ☐☐ Years ago 4 ☐☐ Before last birth 995 ➡ Go to 222. Never menstruated 996 ➡ Go to 228. Don't know 998 ➡ Go to 223.
221	CHECK 220: LESS THAN 1 MONTH OR 4 WEEKS (30 DAYS OR LESS) ☐ ➡ Go to 223 and circle 2 1 MONTH OR MORE AND LESS THAN 2 MONTHS (4 WEEKS OR MORE AND LESS THAN 8 WEEKS) ☐ ➡ Go to 223 2 MONTHS OR MORE (8 WEEKS AND MORE) ☐	
222	Why did your last menstruation occur so long ago?	Menopausal ..... 1 Irregular due to injections..... 2 Postpartum ..... 3] Go to 223 and Circle 2. Pregnant ..... 4 Go to 223 and Circle 1. Don't know..... 5 Not unusual..... 6
223	Are you pregnant now?	Yes..... 1 No..... 2 Not sure..... 3] Go to 228.
224	For how many months have you been pregnant?	Months..... ☐☐
225	Have you had a tetanus injection since you have been pregnant?	Yes..... 1 No..... 2 Don't know 8

No.	Questions and filters.	Coding categories
226	Did you see anyone for a check on this pregnancy?	Yes..... 1 No..... 2 ➡ Go to 228.
227	Whom did you see? (PROBE FOR TYPE OF PERSON AND RECORD MOST QUALIFIED.)	Doctor..... 1 Govt. Nurse..... 2 Family health worker..... 3 Traditional birth attendant..... 4 Other (specify)..... 5
228	Apart from a live birth, a pregnancy can be terminated with a miscarriage, an abortion or a still birth. Have you ever had such a pregnancy?	Yes..... 1 No..... 2 ➡ Go to 231.
229	How many such pregnancies you had?	Number..... ☐
230	How many such pregnancies resulted in the following ways? Still birth Spontaneous abortion Induced abortion	Still birth..... ☐ Spontaneous abortion..... ☐ Induced abortion..... ☐
231	When during a monthly cycle do you think a woman has the greatest chance of becoming pregnant? PROBE: What are the days during the month when a woman has to be careful to avoid becoming pregnant?	During her period..... 1 Right after her period had ended.. 2 In the middle of the cycle..... 3 Just before her period begins..... 4 At any time..... 5 Other (specify)..... 6 Don't know..... 8
232	PRESENCE OF OTHERS AT THIS POINT:	Yes No Children under 10 years..... 1 2 Husband..... 1 2 Other males..... 1 2 Other females..... 1 2

Section 3: Contraception

301 Now I would like to talk about a different topic. There are various ways that a couple can delay or avoid a pregnancy. Please tell me all the methods that you have heard of.

INTERVIEWER: a) CIRCLE CODE 1 IN 302 FOR EACH METHOD MENTIONED SPONTANEOUSLY.
b) THEN PROCEED DOWN THE COLUMN, CONTINUING Q. 302, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 2 IF METHOD IS RECOGNIZED, AND CODE 3 IF NOT RECOGNIZED.
c) THEN FOR EACH METHOD WITH CODE 1 OR 2 CIRCLED IN Q. 302, ASK Q. 303-305 BEFOR PROCEEDING TO THE NEXT METHOD.

METHOD	302 Have you ever heard of (READ METHOD AND DESCRIPTION)?	303 Have you ever used (METHOD)?	304 Where would you go to obtain (METHOD) if you wanted to use it? (CODES BELOW)	305 What would you say is the main problem, if any, in getting or using (METHOD)? (CODES BELOW)
PILL "Women can take a pill every day".	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	☐☐ Other:	☐☐ Other: .....
IUD "Women can have a loop or coil placed inside them by a doctor or a nurse".	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	☐☐ Other:	☐☐ Other: .....
INJECTIONS "Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months".	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	☐☐ Other:	☐☐ Other: .....
DIAPHRAGM, FOAM, JELLY "Women can place a sponge or suppository or diaphragm or jelly or cream inside them immediately before intercourse."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	☐☐ Other:	☐☐ Other: .....
CONDOM "Men can use a rubber sheath during sexual intercourse." **Go to next page**	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	☐☐ Other:	☐☐ Other: .....

Codes for 304

Govt. Hospital/MCH Center	01
Priv Dr/Priv nursing home	02
Non-Govt.clinic	03
Mobile clinic	04
Family health worker/ Nurse	05
Other field workers	06
Ayurvedic doctor	07
Friend/Relative	08
Pharmacy/Shop	09
Other (specify above)	10
Nowhere	11
Don't know	98

Codes for 305

Not effective	02
Husband disapproves	03
Health concerns	04
Access/Availability	05
Costs too much	06
Inconvenient to use	07
Other (specify above)	10
None	11
Don't know	98

Method	302 Have you ever heard of (READ METHOD AND DESCRIPTION)?	303 Have you ever used (METHOD)?	304 Where would you go to obtain .(METHOD) if you wanted to use it? (CODES BELOW)	305 What would you say is the main problem, if any, in getting or using (METHOD)? (CODES BELOW)
FEMALE STERILIZATION "Women can have an operation to avoid having any more children."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	Other:	Other: .....
MALE STERILIZATION "Men can have an operation to avoid having any more children."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	Other:	Other: .....
SAFE PERIOD "Couples can avoid having sexual intercourse on certain days of each month when the woman is more likely pregnant."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	Where would you go to obtain advice about SAFE PERIOD? Other:	Other: .....
WITHDRAWAL "Men can be careful and pull out before climax."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2		Other: .....
NORPLANT "Women can have a tube inserted into their arms and avoid pregnancy for many years."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2	Other:	Other: .....
ANY OTHER METHODS? "Have you heard of any other ways or methods that women or men can use to avoid pregnancy."	Yes/Spon..... 1 Yes/Prbd..... 2 No 3	Yes 1 No 2		

Go to 306.

Codes for 304

Govt. Hospital/MCH Center	01
Priv Dr/Priv nursing home	02
Non-Govt.clinic	03
Mobile clinic	04
Family health worker/ Nurse	05
Other field workers	06
Ayurvedic doctor	07
Friend/Relative	08
Pharmacy/shop	09
Other (specify above)	10
Nowhere	11
Reading	12
Don't know	98

Codes for 305

Not effective	02
Husband disapproves	03
Health concerns	04
Access/Availability	05
Costs too much	06
Inconvenient to use	07
Other (specify above)	10
None	11
Don't know	98

306 CHECK 303: Ever used a method?

NO (NEVER USER) ☐

YES (EVER USER) ☐ ➡ Go to 309.

No.	Questions and filters.	Coding categories
307	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	Yes..... 1 No..... 2 ➡ **Go to 315.**
308	What have you used or done? CORRECT 302-303 AND OBTAIN INFORMATION FOR 304-306 AS NECESSARY.	
309	CHECK 303. EVER USED SAFE PERIOD ☐ ↓ NEVER USED SAFE PERIOD ☐ ➡ **Go to 311.**	
310	The last time you used the safe period, how did you determine on which days you had to abstain?	Based on calendar..... 1 Based on body temperature.. 2 Based on cervical mucus (Billings method)..... 3 Based on body temperature and mucus ..... 4 Other..... 5 (specify)
311	How many living children, if any, did you already have when you first did something to avoid getting pregnant? IF NONE ENTER '00'.	Number of children..... ☐☐
312	CHECK 223. NOT PREGNANT/ NOT SURE ☐ ↓ PREGNANT ☐ ➡ **Go to 323.**	
313	Are you currently doing something or using any method to avoid getting pregnant?	Yes..... 1 ➡ **Go to 318.** No..... 2
314	Have you done something or used a method in the past month to avoid getting pregnant?	Yes..... 1 ➡ **Go to 318.** No..... 2

No.	Questions and filters.	Coding categories
315	Some women abstain from sexual relations completely for more than one or two months for the follwing reasons: 1) To avoid pregnancy 2) Because the child is of marriage age 3) Because the husband is away 4) A woman has just had a baby or is breast feeding 5) Illness 6) Religious reasons Have you ever abstained for any of these reasons?	Yes..... 1 No..... 2 ➡ Go to 322.
316	Are you currently abstaining for any of these reasons?	Yes..... 1 No..... 2 ➡ Go to 322.
317	Which reason?	Avoid pregnancy..... 1 Child of marriage age..... 2 — Go to 318. Husband away..... 3 Postpartum/breastfeeding..... 4 Illness..... 5 Religious reasons..... 6 Other..... 7 (specify) — Go to 322.
318	Which method are you using?	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 — Go to 326. Female Sterilization..... 06 Male Sterilization..... 07 — Go to 319. Safe Period..... 08 Withdrawal..... 09 — Go to 322. Norplant..... 10 ➡ Go to 326. Other..... 11 (specify) Prolonged Abstinence..... 12 — Go to 322.

No.	Questions and filters.	Coding categories
319	In what month and year did you/ he have/ has the operation?	Month..... ☐☐ Don't know..... 98 Year..... ☐☐ Don't know..... 98
320	Did you/ he receive the incentive payment for undergoing the operation?	Yes..... 1 No..... 2 Don't know..... 8 **Go to 326A.**
321	Would you/ he have/ has undergone the operation if there was no incentive payment?	Yes..... 1 No..... 2 **Go to 326A.**
322	CHECK 306: NEVER USED ☐ ↓ EVER USED ☐ ➡ **Go to 323.**	
322 A	CHECK 317: 317 = 1 OR 2 ☐ ↓ 317 = 3 - 7 OR NOTHING CIRCLED ☐ ➡ **Go to 346.**	
323	Have you obtained a method to avoid pregnancy or sought advice about a method to avoid pregnancy in the last twelve months from a hospital, clinic, a doctor, or a fieldworker?	Yes..... 1 No..... 2 ➡ **Go to 325.**
324	Which method did you obtain or seek advice?	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 Feale Sterilization..... 06 Male Sterilization..... 07 Safe period..... 08 Withdrawal..... 09 Norplant..... 10 Other..... 11 (specify) Prolonged abtinence..... 12 **Go to 326.**

No.	Questions and filters.	Coding categories
325	Have you obtained instructions for using the safe period in the last twelve months from a hospital, clinic, a doctor, or a fieldworker?	Yes..... 1 No..... 2 ➡ Go to 328.
326 or 326 A	Where did you obtain method/advice last time? Where did the sterilization take place?	Govt. Hosp/MCH center..... 01 Pvt. Dr/Pvt nursing home ..... 02 Non-Govt. clinic ..... 03 Mobile clinic ..... 04 Family health worker/ Nurse... 05 Other field workers ..... 06 Ayurvedic doctor ..... 07 Friend/Relative ..... 08 Pharmacy/Shop ..... 09 Other (specify) ..... 10 Don't know..... 98 Go to 328.
327	Was there anything you/ your husband disliked about the service you/ your husband received there? If yes: what?	Wait too long..... 1 Staff discourteous..... 2 Services expensive..... 3 Not able to get desired services/method..... 4 Other (specify)..... 5 No complaints..... 6 Don't know..... 8
328	CHECK 223: NOT PREGNANT OR NOT SURE ☐ ➡ PREGNANT ☐ ➡ Go to 346.	
329	CHECK 318: HE/ SHE STERILIZED ☐ ➡ Go to 331. CURRENTLY USING ANOTHER METHOD ☐ NOT CURRENTLY USING ☐ ➡ Go to 340.	

No.	Questions and filters	Coding categories
330	For how long have you been using (CURRENT METHOD) continuously? WRITE THE DURATION IN COMPLETED YEARS AND MONTHS	Months..... ☐☐ Since last birth..... 96 Years..... ☐☐ Since last birth..... 96
331	Have you experienced any problems from using (CURRENT METHOD)?	Yes..... 1 No..... 2 ➡ Go to 333.
332	What is the main problem you experienced?	Not effective..... 02 Husband disapproved..... 03 Health concerns..... 04 Access/Availability..... 05 Cost too much..... 06 Inconvenient to use..... 07 Other..... 10 (specify) Don't know..... 98
333	At any time during the same month, do you regularly use any other method than (CURRENT METHOD)?	Yes..... 1 No..... 2 ➡ Go to 335.
334	Which method is that? CHECK 302 - 306 AND 309, 310 AND CORRECT AS NECESSARY	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 Male Sterilization..... 07 Safe Period..... 08 Withdrawal..... 09 Norplant..... 10 Other (specify)..... 11 Prolonged abstinence..... 12

No.	Questions and filters	Coding categories
335	Have you ever used any other method before (CURRENT METHOD) (since your last birth) to avoid getting pregnant?	Yes..... 1 No..... 2 ➡ Go to 349.
336	Which method did you use before (CURRENT METHOD)? CHECK 302-306 AND 309, 310 AND CORRECT AS NECESSARY	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 Male Sterilization..... 07 Safe Period..... 08 Withdrawal..... 09 Norplant..... 10 Other (specify)..... 11 Prolonged Abstinence..... 12
337	In what month and year did you start using (METHOD BEFORE CURRENT)?	Month..... ☐☐ Don't know..... 98 Year..... ☐☐ Don't know..... 98
338	For how long had you been using (METHOD BEFORE CURRENT) before you stopped using it (last time)? WRITE THE DURATION IN COMPLETED YEARS AND MONTHS	Months..... ☐☐ Don't know..... 98 Years..... ☐☐ Don't know..... 98
339	What was the main reason you stopped using (METHOD BEFORE CURRENT) then?	Not effective..... 02 Husband disapproved..... 03 Health concerns..... 04 Access/Availability..... 05 Cost too much..... 06 Inconvenient to use..... 07 Infrequent sex..... 08 To use permanent method..... 09 Rumours of side effects..... 10 Other (specify)..... 11 Don't Know..... 98 Go to 349.

No.	Questions and filters	Coding categories
340	CHECK 208: Any births? YES ☐ NO ☐ ➡ Go to 342.	
341	Since your last birth have you used any method to avoid getting pregnant?	Yes..... 1 No..... 2 ➡ Go to 346.
342	Which was the last method you used? CHECK 302-306 AND 309, 310 AND CORRECT AS NECESSARY	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 Male Sterilization..... 07 Safe Period..... 08 Withdrawal..... 09 Norplant..... 10 Other (specify)..... 11 Prolonged Abstinence..... 12
343	In what month and year did you start using that method (THE LAST TIME)?	Month..... ☐☐ Don't know..... 98 Year..... ☐☐ Don't know..... 98
344	For how long had you been using (LAST METHOD) before you stopped using it? WRITE THE DURATION IN COMPLETED YEARS AND MONTHS	Months..... ☐☐ Don't know..... 98 Years..... ☐☐ Don't know..... 98
345	What was the main reason you stopped using (LAST METHOD) then?	To become pregnant..... 01 Not effective..... 02 Husband disapproved..... 03 Health concerns..... 04 Access/Availability..... 05 Cost too much..... 06 Inconvenient to use..... 07 Infrequent sex..... 08 Rumours of side effects..... 10 Other (specify)..... 11 Don't know..... 98

No.	Questions and filters	Coding categories
346	Do you intend to use a method to avoid pregnancy at any time in the future?	Yes..... 1 No..... 2 Don't Know..... 8] Go to 349.
347	Which method would you prefer to use?	Pill..... 01 IUD..... 02 Injections..... 03 Diaphragm/Foam/Jelly..... 04 Condom..... 05 Female Sterilization..... 06 Male Sterilization..... 07 Safe Period..... 08 Withdrawal..... 09 Norplant..... 10 Other (specify)..... 11 Prolonged Abstinence..... 12 Not Decided..... 13
348	Do you intend to use (that method) in the next 12 months?	Yes..... 1 No..... 2 Don't Know..... 8
349	Do you think that it is acceptable or not acceptable for family planning information to be provided on radio? on television?	Acc. / Not Acc. / DK Radio..... 1 2 8 TV..... 1 2 8
350	When do you listen to the radio?	Morning. (5.00 a.m. - 12.00 noon) 1 Afternoon (12.00 noon - 6.00 p.m) 2 Evening (after 6.00 p.m) 3 Throughout the day 4 Only occasionally 5 Don't listen 6
351	CHECK 223: NOT PREGNANT OR UNSURE ☐	PREGNANT ☐ ➡ Go to 353.
352	CHECK 214: HAD BIRTH SINCE JULY 1988 ☐	NO BIRTH SINCE JULY 1988 ☐ ➡ Go to 501.

Go to next page

353 Now I would like to get some more information about (your pregnancy and) the methods that you used in the last five years.

INTERVIEWER: FIRST, MARK PREGNANCY STATUS, AND FROM PAGE 12 & 13 RECORD NAMES OF BIRTHS SINCE JULY 1988.
SECOND, MARK APPROPRIATE BOX IN 354, AND ASK THE APPROPRIATE QUESTIONS FOR EACH COLUMN FOR WHICH THE HEADING IS FILLED OUT.

	ASK QUESTIONS ABOUT ALL BIRTHS SINCE JULY 1988.	0 CURRENTLY PREGNANT? Yes ☐ No ☐	1 LAST BIRTH ---------- (Name)	2 NEXT-TO-LAST BIRTH ---------- (Name)	3 SECONT TO LAST BIRTH ---------- (Name)
354	CHECK 306. EVER USED A METHOD ☐ (ASK 355-362 FOR EACH COLUMN) NEVER USED A METHOD ☐ (ASK 361 FOR EACH COLUMN)				
355	Before you became pregnant (with Name) and after the birth of (Name) did you do anything to avoid getting pregnant, even for a short time?	Yes..... 1 No..... 2 ↓ (Go to 361.)	Yes..... 1 No..... 2 ↓ (Go to 361.)	Yes..... 1 No..... 2 ↓ (Go to 361.)	Yes..... 1 No..... 2 ↓ (Go to 361.)
356	Which was the last method you used then? (CODES ON NEXT PAGE)	☐☐ Other:	☐☐ Other:	☐☐ Other:	☐☐ Other: .....
357	Any method before that? (IF NONE, ENTER "00". CODES ON NEXT PAGE)	☐☐ Preceding method	☐☐ Preceding method	☐☐ Preceding method	☐☐ Preceding method
358	For how long had you used (LAST METHOD) that time?	Months ☐☐ Years ☐☐	Months ☐☐ Years ☐☐	Months ☐☐ Years ☐☐	Months ☐☐ Years ☐☐
359	Did you become pregnant while you were still using (LAST METHOD)?	Yes..... 1 (Go to 362.) No..... 2	Yes..... 1 (Go to 362.) No..... 2	Yes..... 1 (Go to 362.) No..... 2	Yes..... 1 (Go to 362.) No..... 2
360	What was the main reason you stopped using (LAST METHOD)? IF RESPONSE IS "TO GET PREGNANT", CIRCLE 01 AND GO TO NEXT COLUMN. IF NOT, SEE CODES NEXT PAGE.	To get pregnant..... 01 (Go to next Column) ☐☐ Other:	To get pregnant..... 01 (Go to next Column) ☐☐ Other:	To get pregnant..... 01 (Go to next Column) ☐☐ Other:	To get pregnant..... 01 (Go to 401.) ☐☐ Other: .....
361	At the time you became pregnant (WITH NAME) did you want to have that child then, to wait until later, or to have no (more) children at all?	Then.....1 Later.....2 No more.....3 (All go to next column)	Then.....1 Later.....2 No more.....3 (All go to next column)	Then.....1 Later.....2 No more.....3 (All go to next column)	Then.....1 Later.....2 No more.....3 (Go to 401.)
362	Did you want to have that child (NAME) at a later time, or not to have another child at all?	Have child later..... 1 Not to have child.....2 (All go to next column)	Have child later..... 1 Not to have child.....2 (All go to next column)	Have child later..... 1 Not to have child.....2 (All go to next column)	Have child later..... 1 Not to have child.....2 (Go to 401.)

Codes for 356, 357

Pill	01
IUD	02
Injection	03
Diaphragm/ Foam/ Jelly	04
Condom	05
Male Sterilization	07
Safe period	08
Withdrawal	09
Norplant	10
Other (specify)	11
Prolonged Abstinence	12

Codes for 360

Not effective	02
Husband disapproved	03
Health concerns	04
Access/Availability	05
Cost too much	06
Inconvenient to use	07
Infrequent sex	08
Rumour of side effects	10
Other (specify)	11
Don't know	98

Section 4: Health of Children

401 **Check 214.** HAD BIRTH SINCE JULY 1988 ☐ ↓ NO BIRTH SINCE JULY 1988 ☐ ➡ **Go to 501.**

402 **AS RECORDED ON PAGES 12 & 13 WRITE THE NAMES AND LINE NUMBERS OF ALL BIRTHS SINCE JULY 1988 IN THE FOLLOWING TABLE. FOR EACH BIRTH, CHECK IF ALIVE OR DEAD, AND MARK THE "✓" APPROPRIATE BOX.**

	ASK QUESTIONS FOR ALL BIRTHS, ALIVE AND DEAD.	LAST BIRTH 1 Name ..... Line No. ☐☐ Alive ☐ Dead ☐	NEXT-TO-LAST BIRTH 2 Name ..... Line No. ☐☐ Alive ☐ Dead ☐	SECOND-TO-LAST BIRTH 3 Name ..... Line No. ☐☐ Alive ☐ Dead ☐
403	Did you receive a tetanus injection when you were pregnant with (NAME)?	Yes, 1 Dose ..... 1 Yes, 2 Does..... 2 No..... 3 Don't Know..... 8	Yes, 1 Dose ..... 1 Yes, 2 Does..... 2 No..... 3 Don't Know..... 8	Yes, 1 Dose ..... 1 Yes, 2 Does..... 2 No..... 3 Don't Know..... 8
404	Did the Family Health Worker visit you when you were pregnant with (NAME)?	Yes..... 1 No..... 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2
405	Did you visit a doctor or a clinic for a check on this pregnancy?	Yes..... 1 No..... 2	Yes..... 1 No..... 2	Yes..... 1 No..... 2
406	Where was (NAME) born?	Govt.Hosp/ Maternity Home.. 1 Pvt. Nursing Home..... 2 At Home..... 3 Other..... 4 (specify)	Govt.Hosp/ Maternity Home.. 1 Pvt. Nursing Home..... 2 At Home..... 3 Other..... 4 (specify)	Govt.Hosp/ Maternity Home.. 1 Pvt. Nursing Home..... 2 At Home..... 3 Other..... 4 (specify)
407	Who assisted with the delivery of (NAME)? PROBE AND RECORD MOST QUALIFIED PERSON.	Doctor ..... 1 Govt. Nurse/ Family health worker..... 2 Traditional birth attendant..... 3 Rel/Neighbour..... 4 Other..... 5 (specify) No one 6	Doctor ..... 1 Govt. Nurse/ Family health worker..... 2 Traditional birth attendant..... 3 Rel/Neighbour..... 4 Other..... 5 (specify) No one 6	Doctor ..... 1 Govt. Nurse/ Family health worker..... 2 Traditional birth attendant..... 3 Rel/Neighbour..... 4 Other..... 5 (specify) No one 6
408	Did you ever feed (NAME) at the breast?	Yes..... 1 No..... 2 (Go to 415.)	Yes..... 1 No..... 2 (Go to 415.)	Yes..... 1 No..... 2 (Go to 415.)

		1	2	3
409	How long after birth did you begin feeding (NAME) at the breast? IF LESS THAN ONE HOUR, ENTER 00 IF MORE THAN ONE HOUR AND LESS THAN 24 HOURS, ENTER HOURS IF 24 HOURS OR MORE THAN 24 HOURS, ENTER DAYS	At the same time..... 000 Hours.... 1 ☐☐ Days..... 2 ☐☐	At the same time..... 000 Hours.... 1 ☐☐ Days..... 2 ☐☐	At the same time..... 000 Hours.... 1 ☐☐ Days..... 2 ☐☐
410	Was the first milk produced was thrown away when you start breastfeeding?	Yes..... 1 No..... 2 (Go to 413.)	Yes..... 1 No..... 2 (Go to 414.)	Yes..... 1 No..... 2 (Go to 414.)
411	Why did you throw it away?	Milk bad for baby..... 1 Milk yellow 2 Baby refused 3 Habit..... 4 Other..... (specify) 5 (Go to 413.) Advised to do so..... 6	Milk bad for baby..... 1 Milk yellow 2 Baby refused 3 Habit..... 4 Other..... (specify) 5 (Go to 414.) Advised to do so..... 6	Milk bad for baby..... 1 Milk yellow 2 Baby refused 3 Habit..... 4 Other..... (specify) 5 (Go to 414.) Advised to do so..... 6
412	Who advised?	Mother/ Mother in law.... 1 Family health worker..... 2 Hospital Staff..... 3 Other..... 4 (Specify)	Mother/ Mother in law.... 1 Family health worker..... 2 Hospital Staff..... 3 Other..... 4 (Specify)	Mother/ Mother in law.... 1 Family health worker..... 2 Hospital Staff..... 3 Other..... 4 (Specify)
413	Are you still breastfeeding (NAME)? (IF DEAD, CIRCLE '3'.)	Yes..... 1 (Go to 416.) No..... 2 Child dead..... 3		
414	At what age did you totally stop breastfeeding (NAME)? IF LESS THAN ONE MONTH ENTER "00"	Month..... ☐☐ At death..... 96 (Go to 416.)	Month..... ☐☐ Still breastfeeding 95 (Go to 416.) At death..... 96	Month..... ☐☐ Still breastfeeding 95 (Go to 416.) At death..... 96

		1	2	3
415	What is the main reason you never breastfed/ stopped breastfeeding (NAME)?	No Milk........... 01 Insufficient milk................. 02 Nipple injured...... 03 Mother ill........... 04 Mother busy........ 05 Other milk/food better for baby...... 06 Baby ill .... 07 Baby refused....... 08 Other................. 09 (specify) Became pregnant... 10 Baby died right after birth........... 11 (Go to 421.)	No Milk........... 01 Insufficient milk................. 02 Nipple injured...... 03 Mother ill........... 04 Mother busy........ 05 Other milk/food better for baby...... 06 Baby ill .... 07 Baby refused....... 08 Other................. 09 (specify) Became pregnant... 10 Baby died right after birth........... 11 (Go to 421.)	No Milk........... 01 Insufficient milk................. 02 Nipple injured...... 03 Mother ill........... 04 Mother busy........ 05 Other milk/food better for baby...... 06 Baby ill .... 07 Baby refused....... 08 Other................. 09 (specify) Became pregnant... 10 Baby died right after birth........... 11 (Go to 421.)
416	At what age did you begin to give the following foods to (NAME)? READ OUT CATEGORIES. Powdered milk: Cow/goat milk Cungee Eggs Mashed potatoes/cereal Fruit juice/ cordials Soup Water IF GIVEN IN FIRST MONTH 00 IF NEVER GIVEN 96 IF DON'T KNOW 98	Months Powdered milk Cow/ goat milk Cungee Eggs Potatoes Fruit juice Soup Water	Months Powdered milk Cow/ goat milk Cungee Eggs Potatoes Fruit juice Soup Water	Months Powdered milk Cow/ goat milk Cungee Eggs Potatoes Fruit juice Soup Water
417	At what age did you start at least one food **except water** on a daily basis?	Months........ Never given...... 96 **(If dead go to 421.)**	Months........ Never given...... 96 **(If dead go to 421.)**	Months........ Never given...... 96 **(If dead go to 421.)**
418	**Check 417:**	6 MONTHS OR LESS (Go to 420.) 7 MONTHS OR MORE	6 MONTHS OR LESS (Go to 420.) 7 MONTHS OR MORE	6 MONTHS OR LESS (Go to 420.) 7 MONTHS OR MORE
419	Why did you wait so long to begin daily supplemental feeding of (NAME)?	....	....	....

		1	2	3
420	When you begin daily supplemental feeding of (NAME), did you continue full breastfeeding, did you reduce, or did you stop completely?	Continued full..... 1 Reduced............. 2 Stopped............. 3 Never Breastfed.... 4	Continued full..... 1 Reduced............. 2 Stopped............. 3 Never Breastfed.... 4	Continued full..... 1 Reduced............. 2 Stopped............. 3 Never Breastfed.... 4
421	How many months after the birth of (NAME) did your period return?	Months...... ☐☐ Not returned........ 96	Months...... ☐☐ Never returned... 96	Months...... ☐☐ Never returned... 96
422	Have you resumed sexual relations since the birth of (NAME)?	Yes (or preg)........ 1 No .... 2 (Go to 424.)	⇓	⇓
423	How many months after the birth of (NAME) did you resume sexual relations?	Months........ ☐☐ Not yet resumed 96	Months...... ☐☐ Not yet resumed 96	Months...... ☐☐ Not yet resumed 96
424	Do you have a clinic card, a child growth card or any other document showing what immunizations (NAME) was given? IF YOU HAVE, please show it?	Yes, card seen ..... 1 Yes, not seen........2 (Go to 427.) ⇐ No card 3	Yes, card seen ..... 1 Yes, not seen........2 (Go to 427.) ⇐ No card 3	Yes, card seen ..... 1 Yes, not seen........2 (Go to 427.) ⇐ No card 3
425	RECORD THE DATES OF INJECTIONS FROM THE CARD. CIRCLE "1" IF NOT GIVEN.	Not Gvn / Year / Month / Day	Not Gvn / Year / Month / Day	Not Gvn / Year / Month / Day
	BCG	BCG 1	BCG 1	BCG 1
	TRIPLE 1	Triple 1 1	Triple 1 1	Triple 1 1
	POLIO 1	Polio 1 1	Polio 1 1	Polio 1 1
	TRIPLE 2	Triple 2 1	Triple 2 1	Triple 2 1
	POLIO 2	Polio 2 1	Polio 2 1	Polio 2 1
	TRIPLE 3	Triple 3 1	Triple 3 1	Triple 3 1
	POLIO 3	Polio 3 1	Polio 3 1	Polio 3 1
	MEASLES	Measles 1	Measles 1	Measles 1
	TRIPLE 4	Triple 4 1	Triple 4 1	Triple 4 1
	POLIO 4	Polio 4 1	Polio 4 1	Polio 4 1

No	Questions and filters	Coding categories
437	CHECK 435: IF "1" MARKED FOR ANY BIRTH TICK "✓" YES ☐ ➡ Go to 440. IF 435 IS EMPTY OR "2" OR "8" IS MARKED TICK "✓" NO ☐	
438	Have you ever heard of Jeevanee or any other ORS Salts which you can give to a child with diarrhea?	Yes..... 1 No..... 2 Don't know..... 8] Go to 441.
439	Have you ever given either JEEVANEE or any other ORS Salts to any of your children?	Yes..... 1 No..... 2 ➡ Go to 441.
440	Where did you obtain the packet (the last time)?	Govt.Hospital/Clinic..... 1 MOH office..... 2 Pharmacy..... 3 Pvt. doctor..... 4 Other..... 5 (specify)
441	CHECK 413 FOR LAST BIRTH: LAST CHILD STILL BREASTFED ☐ ALL OTHERS ☐ ➡ Go to 501.	
442	How many times did you breastfeed (NAME OF LAST BIRTH) last night, between sundown and sunrise?	Number of times..... ☐☐ Child sleeps at breast 96
443	How many times did you breastfeed (NAME OF LAST BIRTH) yesterday during the daylight hours?	Number of times..... ☐☐ As often as wanted..... 96

No	Questions and filters	Coding categories
444	At any time yesterday or last night, was (NAME OF LAST BIRTH) given any of the following? READ OUT CODING CATEGORIES Water Fruit Juice Powdered milk Cow's or Goat's milk Vitamin Syrups/ Medicine Any other liquid Any solid or mushy food	Yes No Water..... 1 2 Fruit Juice..... 1 2 Powdered milk..... 1 2 Cow's or Goat's milk..... 1 2 Vitamin Syrups/ Medicine 1 2 Any other liquid..... 1 2 Any solid or mushy food... 1 2
445	CHECK 444: NO FOOD OR LIQUIDS GIVEN (ALL "2"s CIRCLED IN 444) ☐ ➡ **Go to 447.** WAS GIVEN FOOD OR LIQUIDS (AT LEAST ONE "1" CIRCLED IN 444) ☐	
446	Were any of these given in a bottle with a nipple?	Yes..... 1 No..... 2
447	**Check 432 and 433 for last birth:** NO DIARRHEA IN LAST 2 WEEKS. ☐ ➡ **Go to 501.** HAD DIARRHEA IN LAST 2 WEEKS. ☐	
448	When (NAME) had diarrhea recently, did you continue (full) breastfeeding, did you reduce, or did you stop completely?	Continued full..... 1 ➡ **Go to 501.** Reduced..... 2 Stopped completely..... 3
449	Why did you reduce/stop?	Bad for the child..... 1 Parents advised..... 2 Doctor/ family health worker advised..... 3 Child refused..... 4 Other..... 5

Section 5: Marriage

No.	Questions and filters	Coding categories
501	Are you currently married, widowed, divorced, or separated?	Married..... 1 Widowed..... 2 Divorced..... 3 Separated..... 4 **Go to 502.**
501 A	Are you and your husband currently living together?	Yes..... 1 No..... 2
502	Have you been married once, or more than once?	Once..... 1 More than once..... 2
503	In what month and year did you start living with your (first) husband as husband and wife?	Month..... ☐☐ Don't know month..... 98 Year..... ☐☐ ➡ **Go to 505.** Don't know year..... 98
504	How old were you when you started living with him?	Age in years..... ☐☐
505	Where did you live before you began living with your husband in as urban area, in a village, or on an estate? SEE INSIDE OF THE BACK COVER PAGE FOR THE AREAS OF COLOMBO METROPOLITAN	Colombo metro..... 1 Other urban..... 2 Rural..... 3 Estate..... 4 Abroad..... 5
506	Did your (first) husband live in the same place before marriage, or in a different urban area, village, or estate?	Same area /Village/Estate.... 1 ➡ **Go to 508.** Different urban area..... 2 Different village..... 3 Different estate..... 4 Abroad..... 5
507	How many miles was his place from yours?	Miles..... ☐☐☐
508	Are your mother and father still alive?	Yes No DK Woman's mother 1 2 8 Woman's father 1 2 8

No.	Questions and filters	Coding categories
509	Are your (first) husband's parents still alive?	Yes / No / DK Husband's mother: 1 / 2 / 8 Husband's father: 1 / 2 / 8
510	CHECK 508 AND 509. AT LEAST ONE PARENT NOT LIVING OR DON'T KNOW (NOT ALL '1' S CIRCLED) ☐ ALL PARENTS LIVING (ALL '1' S CIRCLED) ☐ ➡ Go to 514.	
511	FOR EACH "1" CIRCLED IN 508 AND 509, CIRCLE A "1" FOR THE CORRESPONDING PARENT IN 512. THEN ASK 512 FOR THOSE PARENTS NOT HAVING A "1" CIRCLED.	
512	Was (MENTION PARENTS NOT ALIVE NOW) alive at the time you began living with your (first) husband?	Yes / No / DK Woman's mother: 1 / 2 / 8 Woman's father: 1 / 2 / 8 Husband's mother: 1 / 2 / 8 Husband's father: 1 / 2 / 8
513	CHECK 512. SOME PARENT ALIVE AT MARRIAGE ☐ NO PARENT ALIVE AT MARRIAGE/ DON'T KNOW ☐ ➡ Go to 517.	
514	At any time since you began living with your (first) husband, did you and he live with any of these parents for at least 6 months?	Yes..... 1 No..... 2 ➡ Go to 516.
515	For about how many years did you live with the parents at that time?	Years..... ☐☐ Up to the present..... 96 ➡ Go to 517.
516	Are you now living either with your parents or with your husband's parents?	Yes..... 1 No..... 2

No.	Questions and filters	Coding categories
517	CHECK 501. CURRENTLY MARRIED ☐ → 518 OTHER ☐ ➡ Go to 601.	
518	Have you had sexual intercourse in the last four weeks?	Yes..... 1 No..... 2 ➡ Go to 520.
519	How many times? IF DON'T KNOW WRITE '98'	No. of times..... ☐☐
520	When was the last time you had sexual intercourse?	Days ago..... 1 ☐☐ Weeks ago..... 2 ☐☐ Months ago..... 3 ☐☐ Years ago..... 4 ☐☐ Before last birth..... 995 ➡ Go to 525.
521	CHECK 223. NOT PREGNANT/ NOT SURE ☐ → 522 PREGNANT ☐ ➡ Go to 525.	
522	CHECK 318. NOT USING CONTRACEPTION ☐ → 523 CURRENTLY USING ☐ ➡ Go to 525.	
523	If you become pregnant in the next few weeks, would you feel happy, unhappy, or would it not matter very much?	Happy..... 1 ➡ Go to 525. Unhappy..... 2 Would not matter..... 3

No.	Questions and filters	Coding categories
524	What is the main reason that you are not using a method to avoid pregnancy?	Lack of knowledge or lack of source..... 01 Opposed to FP..... 02 Husband disapproves..... 03 Other people disapprove..... 04 Infrequent sex..... 05 Postpartum BF..... 06 Menopausal/Subfecund..... 07 Health concerns..... 08 Access/Availability..... 09 Costs too much..... 10 Religion..... 11 Inconvenient to use..... 12 Rumour of side effects..... 13 Other (specify)..... 14 Don't know..... 98
525	PRESENCE OF OTHERS AT THIS POINT:	Yes / No Children under 10 years 1 2 Husband 1 2 Other males 1 2 Other females 1 2

Section 6: Fertility Preferences

No.	Questions and filters	Coding categories
601	CHECK 318. WOMAN STERILIZED: Yes ☐ → (Go to 609.) HUSBAND STERILIZED: Yes ☐ → (Go to 610.) OTHER ☐ →	
602	CHECK 501. CURRENTLY MARRIED ☐ → OTHER ☐ ➡ (Go to 612.)	
603	Now I have some questions about the future. CHECK 223. ☐ NOT PREGNANT/ NOT SURE Would you like to have a (another) child or would you prefer not to have any (any more) children? ☐ PREGNANT After the child you are expecting, would you like to have another child or would you prefer not to have any more children?	Have a/ another child..... 1 ➡ (Go to 606.) No (More) children..... 2 Undecided/ Don't know..... 8 ➡ (Go to 605.)
604	Would you say that you definitely do not want to have (more) children, or are you not sure?	Definitely no more..... 1 Not sure..... 2 (Go to 612.)
605	Are you more inclined toward having a (another) child, or toward not having a (another) child?	Have another..... 1 ➡ (Go to 607.) Not have another..... 2 Not decided..... 8 (Go to 612.)

No.	Questions and filters	Coding categories
606	Would you say that you definitely want a (another) child, or are you not sure?	Definitely more..... 1 Not sure..... 2
607	How long would you like to wait from now before the birth of a (another) child?	Months..... 1 ☐☐ ➡ (Go to 612.) Years..... 2 ☐☐ ➡ (Go to 612.) Don't know..... 998
608	How old would your youngest child be? IF NO LIVING CHILDREN, CIRCLE '96'	Years..... ☐☐ No living children..... 96 Don't know..... 98 (Go to 612.)
609	Was your last child born by caesarean section?	Yes..... 1 No..... 2
610	Do you regret that you (your husband) had the operation not to have any more children?	Yes..... 1 No..... 2 ➡ (Go to 612.)
611	Would you like to have another child or would you prefer not to have any more children?	Have another..... 1 No more..... 2 Undecided/ Don't know..... 8
612	CHECK 202 AND 204 AND TICK " ✓ " CORRECT BOX. RECORD SINGLE NUMBER, RANGE OR OTHER ANSWER. ☐ HAS NO LIVING CHILDREN: If you could choose exactly the number of children to have in your whole life, how many would that be? ☐ HAS LIVING CHILDREN: If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?	Number..... ☐☐ Range: between ☐☐ and ☐☐ Other answer:..... (specify)

Section 7: Husband's Background and Work

No.	Questions and filters	Coding categories
701	Now I have some questions about your (most recent) husband, his background, and his work.	
702	Did your husband ever attend school?	Yes..... 1 No..... 2 ➡ Go to 706.
703	What was the highest grade in school he completed? CIRCLE BOTH LEVEL AND GRADE	Primary 1 00 01 02 03 04 05 ➡ Go to 705. Secondary 2 06 07 08 09 Higher 3 10 11 12 DK 998 ➡ ➡ ➡ ➡ ➡ Go to 706.
704	What was the highest exam he passed?	G.C.E.O/L..... 1 G.C.E. A/L..... 2 University degree..... 3 Technical/ Professional..... 4 Other..... 5 (specify) None..... 6
705	CHECK 703. PRIMARY ☐ SECONDARY OR HIGHER ☐ ➡ Go to 707.	
706	Can (could) be read a letter or newspaper easily, with difficulty, or not at all?	Easily..... 1 With difficulty..... 2 Not at all..... 3

No.	Questions and filters	Coding categories
707	What kind of work does (did) your husband mainly do?	Farming..... 01 → Go to 709. Fishing/Hunting..... 02 Estate worker..... 03 Unskilled labourer (Own account) 04 Unskilled labourer (Pvt. or Govt. Institute)..... 05 Skilled labourer (Own account).... 06 Skilled labourer (Pvt. or Govt. Institute)..... 07 Petty Trader/Hawker..... 08 Cottage Industry..... 09 Domestic Worker..... 10 Teacher: Primary/Secondary..... 11 Teacher: University/Other..... 12 Nurse/Health worker..... 13 Technical/Mgrl/Professional..... 14 Other..... 15 (specify) Pensionner..... 16 Don't know..... 98
708	Does (did) he earn a regular wage or salary?	Yes..... 1 No..... 2 Don't know..... 8 → Go to 711.
709	Does (did) your husband work MAINLY on his or his family's or on someone else's land?	His/Family land..... 1 Someone else's land..... 2 → Go to 710.
709 A	Does (did) he hire others to work the land for him?	Yes..... 1 No..... 2 → Go to 711.
710	Does (did) he work MAINLY for money or does (did) he work for a share of the crops?	Money..... 1 Share of crops..... 2

No.	Questions and filters	Coding categories
711	Now I have some questions about your work. Before you married your (first) husband, did you ever work regularly to earn money, other than on a farm or in a business run by your family?	Yes..... 1 No..... 2 ➡ Go to 713.
712	When you were earning money then, did you turn most of it over to your family or did you keep most of it for yourself?	Turned over to family..... 1 Keep for self..... 2
713	Since you were first married, have you ever worked regularly to earn money other than on a farm or in a business run by your family?	Yes..... 1 No..... 2 ➡ Go to 715.
714	Are you now working to earn money, other than on a farm or in a business run by your family?	Yes..... 1 ➡ Go to 716. No..... 2
715	Are you now working to earn money on a farm or in a business run by your family?	Yes..... 1 No..... 2 ➡ Go to 717.
716	What kind of work do you mainly do?	Farming..... 01 Fishing/Hunting..... 02 Estate worker..... 03 Unskilled labourers (Own account) 04 Unskilled labourers (Pvt. or Govt. Institute)..... 05 Skilled labourers (own account)... 06 Skilled labourers (Pvt. or Govt. Institute..... 07 Petty trader/Hawker..... 08 Cottage industry..... 09 Domestic worker..... 10 Teacher: Primary/Secondary..... 11 Teacher: University/Other..... 12 Nurse/Health worker..... 13 Technical/Mgrl/Professional..... 14 Other..... 15 (specify) Pensionner..... 16 Don't know..... 98
717	INTERVIEWER: NOW RECORD THE TIME IN HOURS TIME.	Hour..... ☐☐ Minutes..... ☐☐

Section 8: Length and Weight

INTERVIEWER: FROM PAGE 12 & 13, RECORD NAMES AND LINE NUMBERS OF ALL LI VING CHILDREN BORN SINCE JULY 1, 1988. START WITH THE YOUNGEST CHILD.

RECORD DATE OF BIRTH IN 802 AND CHECK AGE IN 803.

801

Name of the Measurer:..... ☐☐

	1 Youngest living child	2 Next-to-youngest living child	3 Second-to-youngest living child	4 Third-to-youngest living child
	..... Name Line No ☐☐	..... Name Line No ☐☐	..... Name Line No ☐☐	..... Name Line No ☐☐
802 Date of birth	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐
803 Check Age: 3-60 months?	Yes..... 1 No..... 2 →	Yes..... 1 No..... 2 →	Yes..... 1 No..... 2 →	Yes..... 1 No..... 2 GO TO NEXT PAGE
804 Length (in cms)	☐☐☐.☐	☐☐☐.☐	☐☐☐.☐	☐☐☐.☐
805 Weight (in kg)	☐☐.☐	☐☐.☐	☐☐.☐	☐☐.☐
806 Result	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5

Interviewer's Observations.

(To be filled in after completing interview)

Person Interviewed: .....

.....

.....

Problems arose at the interview .....

.....

.....

Other Aspects: .....

.....

Name of Interviewer:..... Date:.....

Supervisor's Observations

.....

.....

.....

.....

Name of Supervisor:..... Date:.....

Editor's Observations

.....

.....

.....

.....

Name of Editor:..... Date:.....

Name of Keyer:..... Date:.....

Tear-Off Measurement Sheet

INTERVIEWER: FILL IN IDENTIFICATION INFORMATION AND 802-T WITH CHILD NAME; GIVE THIS TEAR-OFF SHEET TO MEASURER.

MEASURER: COMPLETE 801-T, 804-T, 805-T AND 806T. GIVE THIS TEAR-OFF SHEET TO TEAM SUPERVISOR.

Identification

PSU (Ward/ GN Div./ Estate): ..... ☐☐

SSU (Survey blook number): ..... ☐

Housing unit number: ..... ☐☐☐

Household number: ..... ☐

Line number of eligible woman: ..... ☐☐

801-T

Name of the measurer:..... ☐☐

	1 Youngest living child ..... Name Line No ☐☐	2 Next-to-youngest living child ..... Name Line No ☐☐	3 Second-to-youngest living child ..... Name Line No ☐☐	4 Third-to-youngest living child ..... Name Line No ☐☐
802-T Date of birth	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐	Month..... ☐☐ Year..... ☐☐
804-T Length (in cms)	☐☐☐.☐	☐☐☐.☐	☐☐☐.☐	☐☐☐.☐
805-T Weight (in kg)	☐☐.☐	☐☐.☐	☐☐.☐	☐☐.☐
806-T State reason unable to record	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5	Measured..... 1 Not at home..... 2 Refused..... 3 Child cried..... 4 Other..... 5

INTERVIEWER: RECORD THE INFORMATION FROM 801-T, 804-T, 805-T AND 806-T ON THIS PAGE. INTO 801, 804, 805 AND 806 IN PAGE 45.

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