

# Liberia

## Demographic and Health Survey 1986



Bureau of Statistics  
Ministry of Planning and Economic Affairs



Demographic and Health Surveys  
Institute for Resource Development/Westinghouse

**REPUBLIC OF LIBERIA**

**LIBERIA DEMOGRAPHIC AND HEALTH SURVEY  
1986**

by

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This report presents the findings of the Liberia Demographic and Health Survey, implemented by the Ministry of Planning and Economic Affairs in 1986. The survey is part of the worldwide Demographic and Health Surveys (DHS) Programme which is designed to collect data on fertility, family planning, and maternal and child health. Additional information on this survey can be obtained from the Ministry of Planning and Economic Affairs, P.O. Box 9016, Monrovia, Liberia.

The Liberia Demographic and Health Survey was carried out with the assistance of the Institute for Resource Development (IRD), a subsidiary of Westinghouse Electric Corporation, with offices in Columbia, Maryland. Funding for the survey was provided under a contract with the U.S. Agency for International Development (Contract No. DPE-3023-C-00-4083-00). Additional information about the DHS program can be obtained by writing to: DHS, IRD/Westinghouse, P.O. Box 866, Columbia, MD, 21044, U.S.A. (Telex 87775).

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## PREFACE

The Liberia Demographic and Health Survey (LDHS) was conducted as part of the worldwide Demographic and Health Surveys (DHS) program, in which surveys are being carried out in countries in Africa, Asia, Latin America, and the Middle East. Liberia was the second country to conduct a DHS and the first country in Africa to do so. The LDHS was a national sample survey, designed to collect information on fertility, family planning, mortality and health.

Fieldwork for the Liberia Demographic and Health Survey was conducted from February to July 1986 under terms of an agreement between the Government of Liberia, through the Ministry of Planning and Economic Affairs (MPEA), and the Institute for Resource Development (IRD), a subsidiary of Westinghouse Electric Corporation. Financial assistance was provided by the U.S. Agency for International Development (USAID). Technical and administrative services for the survey were jointly provided by the Ministry of Planning and Economic Affairs and IRD.

Implementation of the DHS survey in Liberia came at an opportune time as the Liberian National Population Commission (NPC) was in the process of formulating a national population policy for Government's approval. The survey will also be useful in providing baseline information to the Southeast Region Primary Health Care Project (SER/PHC) for planning its program to motivate and educate the people in Sinoe and Grand Gedeh Counties in preventive health measures. The LDHS is set to attain additional objectives, some of which are:

- to collect data on the family planning knowledge and behavior of women;
- to ascertain the reasons for high or low fertility among women and the use or non-use of family planning methods;
- to collect data on some health-related matters such as immunizations, breastfeeding and prenatal check-ups;
- to obtain experience in conducting surveys to monitor changes in birth rates, health and the use of family planning;
- to provide Liberian data to the DHS database for international comparative research.

The planning of the LDHS commenced in 1985 at which time a statistical subcommittee was set up in the Bureau of Statistics, MPEA. The subcommittee consisted of representatives of the Ministry of Health and Social Welfare, the Family Planning Association of Liberia, and the Bureau of Statistics, MPEA. The role of the subcommittee was to further develop and adapt the model questionnaire of the DHS to reflect Liberia's situation. Members of the subcommittee from the Bureau of Statistics were instrumental in providing the 1984 census frame and other cartographic documents useful at the listing and enumeration stages.

The success of this large undertaking could not have been realized without the relentless effort and dedication of several institutions and individuals, especially the employees of the Ministry of Planning and Economic Affairs and IRD/Westinghouse, respectively. In particular, I wish to extend my gratitude to the following individuals and institutions who contributed to the success of the LDHS Project.

**Administrative:** Hon. Emanuel O. Gardiner, Hon. Paul R. Jeffy, Hon. J. Rudolph Johnson (former Ministers of MPEA); Hon. Amelia Ward, Deputy Minister for Economic Planning and Statistics; Hon. T. Edward Liberty, Assistant Minister for Statistics, Bureau of Statistics; Hon. Abraham Y. Turay, Assistant Minister for Administration, and his staff.

**Technical Committee:** Hon. T. Edward Liberty, Chairman/Assistant Minister for Statistics; Mr. Philip Gadegbeku, LDHS Project Director/Co-Chairman; Mr. A. Massalee, Director of Population Division/Member; Mrs. Dorothy Chieh-Johnson, LDHS Project Coordinator/Member; Mr. S.N. Goswami, UN Advisor to MPEA/Member; Hon. J. Prall, Assistant Minister and Registrar General, MOH&SW/Member; Dr. McArthur Wolo and Mr. R. Ainsworth of PHC, MOH&SW/Members.

**Technical:** Mrs. Dorothy Chieh-Johnson, LDHS Project Coordinator, MPEA; Ms. Anne R. Cross, Dr. Ann Way and Dr. Jeremiah Sullivan, DHS Coordinators, IRD/Westinghouse; Dr. Alfredo Aliaga, Sampler, IRD/Westinghouse and Mr. Lawrence Akoi, Assistant Sampler, MPEA.

**Field Staff:** Ms. Sandra Howard, Field Coordinator, University of Liberia; Ms. Viola Wesley, Ms. Faith Lawrence, and Messrs. Alfred Jaryan, Theo Barlay, Mully Sandi and Whoniyon Bryant, Field Supervisors, and their Field Editors and Enumerators.

**Data Processing Staff:** Ms. Jeanne Cushing and Ms. Elizabeth Britton, IRD/Westinghouse; Mr. R. Togba, Ms. Rozana Soko and Ms. Hawa Sherif, Data Processing Supervisors, Bureau of Statistics, and their assistants.

**Institutions:** Ministry of Health and Social Welfare; Family Planning Association of Liberia (FPAL); Ministry of Internal Affairs (MIA); and all concessions.

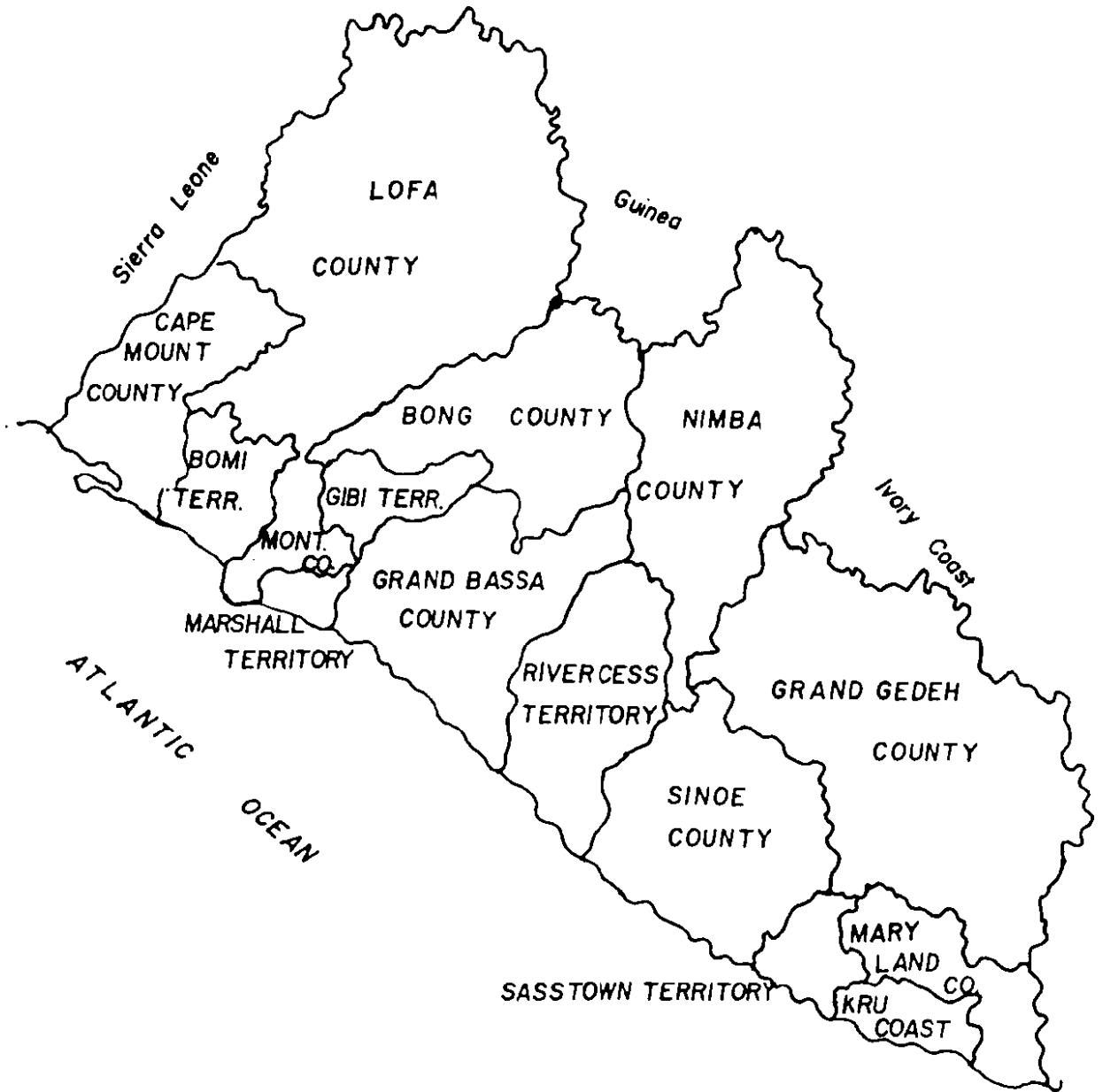
Finally, I extend my sincere thanks to all the Superintendents of the various counties and to all those who contributed one way or another to the success of the Liberia Demographic and Health Survey.

*Elijah E. Taylor*

Minister, Ministry of Planning  
and Economic Affairs, R.L.



# MAP OF LIBERIA



Scale: 1: 3,000,000

## SUMMARY

The Liberia Demographic and Health Survey (LDHS) was a national-level survey conducted from February to July 1986, covering a sample of 5,239 women aged 15 to 49. The purpose of the survey was to provide planners and policymakers with data regarding fertility, family planning, and maternal and child health. A secondary objective was to collect baseline information for the Southeast Region Primary Health Care Project.

Survey data indicate that fertility is high in Liberia, with women having an average of about six and one-half births by the time they reach the end of their childbearing years. This level of fertility is found both from data on the mean number of children ever born to older women, as well as from the recent total fertility rate. Furthermore, it appears that fertility has been more or less constant in the recent past, and may be increasing slightly. Women in urban areas and in Montserrado County have somewhat fewer children than women in other areas. The most significant difference in fertility rates is by educational level, where women with secondary or higher education average fewer than 5 births per woman, as compared with 7 births for women with primary education. Childbearing in Liberia begins at an early age; over half of Liberian women have their first birth before they reach age 20.

One reason for the high fertility levels in Liberia is that marriage (whether legal, traditional, or consensual) is early and almost universal. Half of all Liberian women marry before they reach age 18 and less than two percent remain unmarried their entire life. There is evidence of a trend toward later marriage—the median age at union has risen from about 16 for older women, to over 18 for the 20–24 year olds. Urban women marry a year and a half later on average than their rural counterparts, while women with secondary education marry almost four years later than women with no education. Polygyny is common in Liberia, with almost 40 percent of currently married women reporting that their husbands have other wives.

Traditional practices of breastfeeding and postpartum abstinence still provide substantial protection from pregnancy after the birth of a child. Babies are breastfed for an average of 17 months, which no doubt helps to extend the average duration of postpartum amenorrhea to 11 months. Sexual abstinence after a birth is also long in Liberia, with an average duration of 13 months. LDHS data show a trend toward the weakening of traditional breastfeeding and abstinence practices among younger, urban and more educated women.

Another factor leading to high fertility is the low level of contraceptive use in Liberia. Although 72 percent of Liberian women know at least one contraceptive method, only 22 percent have ever used a method, and only 8 percent are currently using. Both knowledge and use of family planning is low among currently married women, with only 6 percent of married women currently using a method. Low rates of use may be due in part to lack of awareness of sources for obtaining family planning services, since less than half of all women know of a place to get a method.

Most users rely on modern methods. The pill is the predominant method; more than half of all current users rely on it. Female sterilization, periodic abstinence, and the IUD account for the majority of the rest of the users. Contraceptive use is higher among women with more children, urban women, women in Montserrado County, Christian women, and women from the Grebo,



Kru/Sapo, and Lorma tribes. The most outstanding differential in family planning use, however, is by education level; the use rate among women with some secondary schooling is nearly ten times the rate of women who never went to school. With regard to sources of supply, 40 percent of current users obtain their methods through the Family Planning Association of Liberia, while 29 percent rely on government services and 23 percent on private sources.

The most common reason for non-use cited by women who are exposed to the risk of becoming pregnant and do not want to get pregnant immediately is fear of side effects. Other reasons include disapproval of family planning by either the partner or the respondent herself, cost of methods, and difficulty in obtaining them. Approval of family planning is not widespread in Liberia—*slightly less than half of currently married women knowing about family planning approve of its use by couples and only 30 percent feel that their husbands approve.*

Despite the low level of contraceptive use, LDHS data indicate that the potential need for family planning is great. Seventeen percent of married women say that they want no more children and 33 percent want to wait at least two years before having their next child. This means that half of all married women are potentially in need of family planning either to limit or to space births. Furthermore, 30 percent of women who had a birth in the 12 months prior to the survey indicated that their last birth was either unwanted or mistimed.

With regard to health issues, LDHS data indicate that out of every 1,000 births, 144 die before reaching their first birthday and 220 die before reaching age five. While these rates indicate high levels of mortality, the rates for earlier time periods are even higher, and there is a clear trend of declining childhood mortality over the past decade. As expected, childhood mortality is higher among boys than girls and among children of rural than urban mothers. The most significant differentials are those associated with the length of the preceding birth interval. The infant mortality rate for intervals of less than two years (203) is almost three times the rate for 4 years or more (72).

About two out of every three Liberian children under five has received some immunization; however, only about one out of five children age one year and over with health cards is fully immunized, i.e., has received BCG and measles vaccinations and completed three doses of DPT and polio.

LDHS data indicate high levels of prevalence of certain childhood diseases. Of children under five, 40 percent had diarrhea in the four weeks before the survey, 50 percent had fever, and 37 percent had respiratory difficulties. Antibiotics and traditional medicine are the most common treatments for diarrhea, antimalarial medicine for fever, and cough syrup for respiratory problems. Almost 20 percent of children under five have had measles.

# 1. BACKGROUND

## 1.1 History

Liberia, one of the oldest republics on the continent of Africa, is unique because of its non-colonial background. Available information suggests that the spatial settlement of various ethnic groups as found today began sometime in the 14th century. It appears fairly certain that most of the tribes arrived between the twelfth and sixteenth centuries from the north, northeast, and the east; many came from the savanna areas near the Sahara Desert, fleeing from the Islamic Jihad (Moslem Holy War). It is further suggested that the migration of tribes into Liberia occurred in stages, following, among other factors, the decline of the Mali and Songhay Empires in 1375 and 1591, respectively. These migrations were probably encouraged by the favorable agricultural and economic conditions and the availability of land.

The earliest information about the geographic area now known as Liberia came from European explorers and seafarers who frequented the west coast of Africa during the 15th century. Pedro de Sintra, a Portuguese, reached Liberia first in 1461 and again in 1462, when he started a Portuguese trade monopoly which lasted until 1515. Some of the principal items traded were ivory, gold and melegueta pepper. At the end of the 16th and the beginning of the 17th centuries, the Dutch came to Liberia in search of items traded by the Portuguese. Both the Dutch and the Portuguese gave names to most of the rivers, capes, and mountains found on the west coast, including Cape Mount (Cabo do Monte), Cestos River, Cape Palmas and Cavalla River. The Portuguese also taught the Vai and the Kru ethnic groups their languages. The English and French were also active on the west coast of Africa.

The arrival of emancipated slaves from the United States of America marked the beginning of a new era in Liberia. In 1816, the American Colonization Society was founded by a group of American philanthropists, whose primary aim was to resettle the freed slaves in the land of their forefathers. In December, 1821, Messrs. Ayres and Stockton of the Society bought the future site of Monrovia and a strip of coastland known as Providence Island from the chiefs of the De and Mamba tribes. These were used as settlements for freed men of color who began arriving in 1822. The colony did not have an easy start, as the chiefs and original inhabitants were reluctant to give up their lands, leading to several tribal attacks on the new colony. In addition, diseases and lack of technical and financial assistance contributed to the difficult struggle of the colony.

In 1825, Liberia acquired its name and its first constitution. As years went by, many small settlements were founded and joined to form the Commonwealth of Liberia. However, the unwillingness of the British Government to accept the Commonwealth as a sovereign government during a dispute over levying import duties on British trading ships, led to Liberia's declaration of independence in 1847. Since its independence, Liberia has gained political, social and economic cohesion, facing the challenge of time.

The descendants of the freed slaves, known as Americo-Liberians, and constituting less than five percent of the populace, governed the country on a colonial pattern of indirect rule, thus transferring the socioeconomic and political system of the United States to this land. After more than a century of settlers' oligarchy, Liberia saw a change in its political structure on April 12, 1980, when a coup d'etat ushered in the first indigenous leader. Since the inception of the indigenous

government, otherwise known as the Second Republic, the constitution and some socio-political characteristics have remained patterned after the United States of America, with which Liberia has maintained a traditional informal as well as formal affiliation over the years. The indigenous people of Liberia comprise about 96 percent of the country's population and are distinguishable into sixteen major tribes.

## 1.2 Geography and Climate

Located on the west coast of Africa between a longitude of 7° and 12° West and a latitude of 4° and 9° North, the Republic of Liberia covers an area of approximately 99,068 square kilometers. It is bordered by Sierra Leone on the west, Guinea in the north, and Ivory Coast in the east. The Atlantic Ocean provides a long coastline of 550 kilometers in the south (see map).

The climate is humid tropical, with a long rainy season April to October and a dry season November to March. The average annual rainfall is 400 cm.; the coastal region receives over 500 cm., with rainfall diminishing inland. Because of their altitude, areas around Mt. Nimba and Voinjama in the extreme north receive more rain than the central part of Liberia.

The average annual temperature is 28°C and whilst there is very little variation throughout the year, daily and seasonal temperature ranges do increase significantly inland from the coast. The humidity is generally extremely high, especially in the coastal area where it ranges from 90 to 100 percent. Between December and early February, the Harmattan, a dry wind, sweeps across Liberia, bringing dust and causing high temperatures during the day and low temperatures at night.

Due to the climatic conditions, Liberia has a tropical rain forest vegetation. Exceptions are the extreme north and northwest with its savanna woodlands and the coastal belt where a number of different types of vegetation are found. Liberia's forest vegetation is characterized by a predominance of leguminous trees and a small volume of timber.

## 1.3 Economy

Liberia's economy is considerably influenced by the importation of raw materials, equipment, and a wide variety of consumer goods. Production for the export sector is carried out on a large scale through foreign investment. The most important activity is the mining and shipment of iron ore; but, due to declining world demand, its share of the export market has decreased considerably. Other exports include rubber, timber, diamonds, and increasingly, agricultural commodities.

The Government is the largest single employer in the country. The manufacturing industry is small and is mainly geared to supplying goods for the domestic market. Construction activity is also limited and is mainly determined by the investment in the concession sector of the economy. About 70 percent of the Liberian population is engaged in traditional agriculture, growing rice, cocoa, coffee, and other cash crops. Realizing fairly low yields and moderate incomes, this sector has little influence on the economy as a whole.

A period of high economic growth was experienced from 1964 to 1974, when the average annual Gross Domestic Product (GDP) growth rate was 5.7 percent. This was mainly attributed to expanded export of iron ore and rubber and the exploitation of the rain forest resources. However, between 1975 and 1980, the growth rate of the GDP decreased to 1.7 percent as a result of the

sluggish demand for Liberia's exports and consequent low prices paid for its products on the world market.

## **1.4 Educational System**

For quite some time, Liberia has subscribed to the principle of universal education. As early as 1839, a public school law and its 1912 revision promulgated compulsory education in Liberia. Furthermore, the National Socioeconomic Development Plan (1976–1980) made “universal basic education” an explicit development objective. Although the educational system has expanded rapidly over the last three decades in response to this national commitment, the fulfillment of universal education even at the primary level is yet to be attained.

The educational system in Liberia is of two types, formal and informal. The informal consists of the “bush schools” for boys and girls, while the formal comprises three levels: elementary (grades 1–6), secondary (grades 7–12), and higher education (degree programs). The Ministry of Education is the government's arm responsible for administering primary and secondary schools, including those that provide vocational and technical instruction. It also organizes primary teacher training and supervises both public and private schools. The University of Liberia and Cuttington University College are the only two universities in the country.

Generally, school attendance rates are higher in urban areas than in rural areas. In rural areas, particularly among small farmers who constitute the majority of the population, literacy is not a requirement for daily life. As a result, “Western” type education is not usually adopted. Many small farmers strongly believe that “Western” education will alienate their children from traditional beliefs and values and be a disruptive influence within the family; hence, they are not enthusiastic about sending their children to school.

This belief probably accounts for the prevailing low level of literacy, particularly among women. Based on data from the 1984 Census, only 34 percent of the men and 17 percent of the women aged 10 years and over were able to read and write English. This, however, is a slight improvement over 1974 Census figures which showed that only 30 percent of men and 12 percent of women were literate.

Moreover, there was an improvement in the attendance rates of the school-aged population from 1974 to 1984. In 1974, about 26 percent of the school-aged population were enrolled in school—35 percent of males and 17 percent of females—whereas by 1984, the rates had almost doubled, to about 46 percent of the school-aged population attending school. The differential by sex also narrowed, with 57 percent of males and 34 percent of females attending school.

## **1.5 Religion**

Liberia is predominantly a Christian nation. Based on data from the 1984 census, about 68 percent of the population are Christian, 14 percent are Muslim, while the remaining 18 percent belong to the category “Other or No Religion.” The distribution by ethnic affiliation shows that the Kpelle, Bassa, Grebo, Kru, and Gio tribes are predominantly Christian, while the Mandingo, Vai and Gola ethnic groups are predominantly Muslim.

## **1.6 Population**

### **Size and Structure**

Liberia's population has more than doubled during the past three decades, from an estimated 824,000 persons in 1950 to 2.1 million persons according to the 1984 census. Between 1962 and 1974, the population grew by 47.9 percent, whereas between 1974 and 1984 the change was 39.8 percent (MPEA, 1986: Table 1). The rate of intercensal population growth has remained the same with an average annual growth rate of 3.3 percent per annum from 1962 to 1974 compared to 3.4 percent from 1974 to 1984.

The population of Liberia is characterized by a young age distribution which is the result of high fertility and declining mortality in recent years. In 1974, the population under 15 years of age was 615,000, or 41 percent of the total population (MPEA, 1977: Table 3). By 1984, this number had increased to 907,000, or 43 percent of the total population (MPEA, 1987).

The momentum generated by high fertility and declining mortality also has an impact on the number of women of reproductive age; this group has increased from 377,000 women in 1974 to 497,000 in 1984. Such a large increase in the childbearing population implies that even if the number of births per woman dropped rapidly, population growth would remain high.

### **Mortality**

Mortality levels in Liberia have been declining. In 1974, the crude death rate was estimated at 17 per thousand population per year, with the rate for males slightly higher than that for females. The infant mortality rate for both sexes in the same year was estimated at 141 per thousand live births (University of Liberia and MPEA, 1981). Recent estimates from the 1984 Census indicate that the infant mortality rate has declined to 127 per thousand births (Republic of Liberia, 1987). Similarly, the estimated expectation of life at birth for both sexes has increased from 49 years in 1974 to 53 years in 1979–1984 (University of Liberia and MPEA, 1981: 89; Republic of Liberia, 1987: 3).

### **Fertility**

Data from the 1970–71 Liberia Population Growth Survey (LPGS), the 1978 National Demographic Survey (NDS) and the 1974 and 1984 censuses have all shown that the level of fertility in Liberia is high. In 1974, the crude birth rate was estimated to be 49 per 1000 population per year and the total fertility rate (TFR) to be 6.7 children (University of Liberia and MPEA, 1981: 81, 84).

### **Migration and Urbanization**

Although lifetime immigration into Liberia is small, it appears to be increasing. In 1984, about 95,000 or 4.6 percent of the total enumerated population were foreign-born. This was about 36,000 persons more than in 1974 when the foreign-born comprised only four percent of the total population. In 1984, over 90 percent of the lifetime immigrants were from other African countries; three-fifths were from neighboring countries of Sierra Leone, Guinea, and Ivory Coast

(MPEA, 1987). Analysis of data from the LPGS shows that the major reasons for migrating were related to job opportunities.

The number of persons living in urban areas increased from 29 percent in 1974 to approximately 39 percent in 1984, almost a 10-point increase in 10 years. The rapid growth in Liberia's urban population is not only due to natural increase, but to a large extent, the high rate of rural-to-urban migration. Monrovia, the national capital, is the most urbanized area in Liberia. Its population grew from 46.6 percent of the total urban population in 1974 to 51.6 percent in 1984.

## **1.7 Population and Family Planning Policies and Programs**

Family planning activities were initiated in Liberia in 1956, with the establishment of the Family Planning Association of Liberia (FPAL). In 1972, based on a Presidential Proclamation, family planning was officially incorporated into Liberia's health programs. Since then, FPAL's role has been to assist the Ministry of Health and Social Welfare in implementing comprehensive, effective, and efficient family planning services to promote childspacing as a basic human right for the welfare of individuals and couples.

Currently, family planning services are provided through clinics jointly administered by FPAL and the Ministry of Health and Social Welfare in nine of the thirteen counties in Liberia. Available data indicate that most acceptors use oral contraceptives, IUDs, and condoms, while a few use injectables.

Natural family planning is gradually gaining support in Liberia. Although still at the development stage, a natural family planning program organized by the National Catholic Secretariat covers three counties in Liberia. Natural family planning does not involve the use of artificial methods but only natural rhythm method. The program does not have organized clinics, but provides services through health authorities in the various counties.

## **1.8 Health Priorities and Programs**

The Ministry of Health and Social Welfare is responsible for meeting the health and social welfare needs of the Liberian citizenry, by providing a viable health care delivery system which will permeate every urban and rural community of Liberia. In its continuing efforts to expand health services to a majority of the Liberian population, the Ministry has gradually shifted from the costly curative, intensive programs of the 1970s to cost-effective, preventive-oriented primary health care programs.

The health policy of the Government is to provide health care for all its people through a National Health Delivery System. This system is designed to provide, in a complementary manner, preventive and curative health services throughout the country. Particular emphasis is placed on maternal and child health services, environmental sanitation, immunization, and health education. The goal of the system is to extend health coverage for the population from 35 percent of the population to 90 percent by the year 2000, at an annual rate of 3 percent (MPEA, no date: 118, 119).

Recently, the government initiated the Southeast Region Primary Health Care (SER/PHC) Project, a USAID-funded program focused on Sinoe and Grand Gedeh Counties. Among other

things, the SER/PHC project aims at decreasing infant mortality, increasing immunization coverage of young children, educating mothers about oral rehydration therapy for diarrhea, increasing the contraceptive prevalence rate, and increasing the number of deliveries by trained health workers. Its immunization efforts are aimed at combatting the six major childhood diseases: measles, tetanus, polio, tuberculosis, whooping cough and diphtheria.

Health conditions in Liberia have been improving over the last twenty years. Life expectancy, for instance, has risen, while the supply of physicians and of hospital beds has improved in relation to the size of population. Nevertheless, only about 35 percent of Liberia's population have access to any form of modern medical services. In 1980, the total number of health facilities included 58 hospital and health centers and 310 health posts and clinics (MPEA, no date: 115).

## **1.9 Objectives of the Survey**

The major objective of the LDHS was to provide data on fertility, family planning, and maternal and child health to planners and policymakers in Liberia for use in designing and evaluating programs. Although a fair amount of demographic data was available from censuses and surveys, almost no information existed concerning family planning, health, or the determinants of fertility, and the data that did exist were drawn from small-scale, subnational studies. Thus, there was a need for data to make informed policy choices for family planning and health projects.

A more specific objective was to provide baseline data for the Southeast Region Primary Health Care Project. In order to effectively plan strategies and to eventually evaluate the progress of the project in meeting its goals, there was need for data to indicate the health situation in the two target counties prior to the implementation of the project. Many of the desired topics, such as immunizations, family planning use, and perinatal care, were already incorporated into the model DHS questionnaire; nevertheless, the LDHS was able to better accommodate the needs of this project by adding several questions and by oversampling women living in Sinoe and Grand Gedeh Counties.

Another important goal of the LDHS was to enhance the skills of those participating in the project for conducting high-quality surveys in the future. Finally, the contribution of Liberian data to an expanding international dataset was also an objective of the LDHS.

## **1.10 Organization of the Survey**

The LDHS was a national-level survey, with oversampling in Sinoe and Grand Gedeh Counties so that separate estimates could be produced for the Southeast Region Primary Health Care Project. The 156 enumeration areas covered in the LDHS were selected with probability proportional to size, using the 1984 Population Census as a sampling frame. Field teams listed all households in each selected area, after which individual households were selected for interview. Because of oversampling, the sample is not self-weighting at the national level, and the figures given in this report are based on weighted data. A more complete description of the sample design is given in Appendix A.

The LDHS utilized two questionnaires: one to list members of the selected households (Household Questionnaire) and the other to record information from all women aged 15–49 who

were present in the selected households the night before the interview (Individual Questionnaire). Both questionnaires were produced in Liberian English and were pretested in September 1985.

The Individual Questionnaire was an early version of the DHS model questionnaire. It covered three main topics: (1) fertility, including a birth history and questions concerning desires for future childbearing, (2) family planning knowledge and use, and (3) family health, including prevalence of childhood diseases, immunizations for children under age five, and breastfeeding and weaning practices. Both questionnaires are reproduced in Appendix C.

The field staff for the LDHS consisted of 24 female interviewers, 6 field editors, 6 supervisors, and one fieldwork coordinator. Except for the supervisors, who were experienced MPEA staff members, all field staff were specially recruited for the LDHS. Two training courses were held simultaneously in Monrovia, and Zwedru, Grand Gedeh, for the entire month of February, 1986. Training included practice interviewing, both in the classroom, as well as in the field. Since most of the interviews were conducted in the local dialects, the training course also covered practice in asking questions in the vernacular. After training, six teams were formed, one for each of the major dialects covered in the sample. Data collection began in late February and was largely completed by July, except for some call-backs.

Data from the questionnaires were entered onto microcomputers at the Bureau of Statistics office in Monrovia. The data were then subjected to extensive checks for consistency and accuracy. Errors detected during this operation were resolved either by referring to the original questionnaire, or, in some cases, by logical inference from other information given in the record. Finally, dates were imputed for the small number of cases where complete dates of important events were not given.

Information on the completeness of date reporting is of interest in assessing data quality. With regard to dates of birth of individual women, 42 percent of respondents reported both a month and year of birth, 21 percent gave a year of birth in addition to current age, and 37 percent gave only their ages. With regard to children's dates of birth in the birth history, 85 percent of births had both month and year reported, 12 percent had year and age reported, 1 percent had only age reported, and 2 percent had no date information.

## **1.11 Background Characteristics of the Surveyed Women**

In the Liberia Demographic and Health Survey, 5,026 households were interviewed, representing a response rate of 90 percent. Within the interviewed households, 5,340 eligible women were identified, of which 5,239 (98 percent) were interviewed (see Appendix A for details on response rates). Eligibility for the individual interview was based on *de facto* criteria, i.e., women who were between 15–49 years of age and had stayed in the selected household the previous night.

This section of the report briefly examines the demographic and other social characteristics of these women. Knowledge of these characteristics is not only useful on its own, but also provides a rough measure of the quality of the data and allows the reader to interpret other survey findings more easily.

The distribution of LDHS respondents by background characteristics is given in Table 1.1, along with comparable data from the 1974 and 1984 censuses. The data show that the age distribution of LDHS respondents is comparable to that of the country as a whole, with two minor excep-



TABLE 1.1 PERCENT DISTRIBUTION OF WOMEN AGED 15-49 BY BACKGROUND CHARACTERISTICS, LIBERIA, 1974, 1984, AND 1986

Characteristic	1974 Census	1984 Census	1986 LDHS
<u>Age</u>			
15-19	22.1	23.8	21.7
20-24	17.8	20.8	19.7
25-29	17.7	17.5	20.6
30-34	15.3	12.6	12.6
35-39	12.2	11.2	11.9
40-44	8.2	7.7	6.2
45-49	6.7	6.4	7.3
<u>Urban-Rural</u>			
Urban	28.5	37.8 <sup>a</sup>	43.2
Rural	71.5	62.2 <sup>a</sup>	56.8
<u>Education<sup>b</sup></u>			
None	89.5	79.4	62.6
Primary	6.7	8.9	18.4
Secondary or more	3.8	11.7	19.0
<u>Religion</u>			
Christian	NA	67.7	54.2
Muslim	NA	14.2	14.4
Trad'l/Other	NA		12.5
None	NA	18.1	18.9
<u>Tribe<sup>c</sup></u>			
Bassa	14.7	14.4	12.7
Gio	9.0	8.1	7.7
Gola	4.4	4.0	4.6
Grebo	7.6	8.5	7.3
Kpelle	20.0	19.8	16.3
Krahn	4.9	3.8	4.2
Kru/Sapo <sup>d</sup>	7.7	7.1	10.6
Lorma	5.7	5.6	6.0
Mandingo	4.0	4.9	6.0
Mano	7.6	7.2	7.9
Other/None	14.4	16.6	16.8
All Women	100.0	100.0	100.0

NA = not available

<sup>a</sup> Refers to all women

<sup>b</sup> For the two censuses, refers to women aged 15 and above

<sup>c</sup> For the two censuses, refers to women aged 15-44

<sup>d</sup> For the two censuses, includes Kru only

tions. The proportions of LDHS respondents in both the 25–29 and 45–49 age groups are higher than in the 1974 and 1984 censuses and are higher than the proportions in the immediately preceding age groups. In a country with high fertility such as Liberia, one would expect the proportions to decrease gradually at each successive age group. These two anomalies may reflect a bias in age reporting in the LDHS. In any case, the discrepancies are minor and, on the whole, the age distribution of LDHS respondents appears to be accurate.

The data indicate that two out of every five women in Liberia are from urban areas. Comparison with data from the 1974 Census show the large increase in urbanization that has taken place in the past 12 years. The fact that census data are based on a *de jure* definition of residence as compared to the *de facto* definition of residence used in the LDHS probably has an extremely minor effect.

All women interviewed in the LDHS were asked if they had ever attended school. Those who responded positively were further asked the highest level of school attended according to the country's formal educational system. Respondents were grouped into three categories: those with no education, those who completed between 1–6 years of primary school (primary), and those who completed some secondary school or higher (secondary or more).

Among the women surveyed, 63 percent have no education, 18 percent have had some primary education, and 19 percent have secondary or higher education. Unfortunately, census data for women of comparable age are not available, however, data for women aged 15 and above for 1974 and 1984 do show evidence of a trend toward higher education of women.

All women interviewed in the survey were classified into four religious categories: Christian, Muslim, traditional/other, and none. The classification Christian includes all Christian denominations. The LDHS findings show that over one-half of respondents are Christian, about 14 percent are Muslim, 13 percent belong to other or traditional religions, while almost 20 percent report no religious affiliation. With the exception of the Muslim category, the 1986 figures do not agree very closely with those from the 1984 Census. It appears that many women who were reported as Christians in the 1984 Census were reported in either the "Traditional/other" or the "none" category in the LDHS. No question on religious affiliation was included in the 1974 Census.

Respondents in the survey were grouped into eleven major ethnic groups, namely: Bassa, Gio, Gola, Grebo, Kpelle, Krahn, Kru/Sapo, Lorma, Mandingo, Mano and "other/none." Although there are sixteen major tribes in Liberia, some have been grouped into the "other/none" category due to their small size. The distribution of women by tribal affiliation is given in the bottom of Table 1.1. The data from all three sources show similar patterns, with the Kpelle and Bassa tribes being the largest. The LDHS shows a somewhat smaller proportion of Kpelle women than the two censuses.

In later sections of this report, differentials in many variables will be presented by background characteristics of respondents. It is important to bear in mind that there are also interrelationships *between* the background characteristics themselves. Although not all these interrelationships can be explored in this report, Table 1.2 presents data concerning the relationship between educational attainment of women and other characteristics.

TABLE 1.2 PERCENT DISTRIBUTION OF WOMEN BY EDUCATION, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Education			Total Percent	Number	
	No Educ-ation	Primary	Second-ary or More		Wtd.	Unwtd.
<u>Age</u>						
15-19	36.7	41.1	22.2	100.0	1,137	1,169
20-24	48.5	20.8	30.7	100.0	1,030	982
25-29	67.8	12.1	20.1	100.0	1,081	1,012
30-34	74.3	10.2	15.5	100.0	658	660
35-39	84.3	5.7	10.0	100.0	626	640
40-44	86.2	7.3	6.5	100.0	327	370
45-49	88.0	6.5	5.5	100.0	380	406
<u>Urban-Rural</u>						
Urban	46.2	20.5	33.3	100.0	2,262	1,944
Rural	75.2	16.8	8.1	100.0	2,977	3,295
<u>Region</u>						
Sinoe	65.2	22.2	12.6	100.0	150	834
Grand Gedeh	69.1	23.5	7.4	100.0	293	920
Montserrado	44.1	20.0	35.9	100.0	1,459	1,060
Rest of country	70.1	17.1	12.8	100.0	3,337	2,425
<u>Religion</u>						
Christian	50.1	21.1	28.8	100.0	2,838	3,133
Muslim	80.7	10.7	8.6	100.0	754	602
Trad'l/Other	69.4	19.7	10.9	100.0	658	602
None	80.4	15.8	3.9	100.0	989	902
<u>Tribe</u>						
Bassa	66.0	19.0	15.0	100.0	664	490
Gio	64.9	20.6	14.6	100.0	401	294
Gola	60.5	19.8	19.8	100.0	244	177
Grebo	39.4	23.0	37.6	100.0	380	570
Kpelle	74.9	15.2	9.9	100.0	854	661
Krahn	54.7	26.7	18.6	100.0	219	521
Kru/Sapo	46.3	26.5	27.2	100.0	555	1,039
Lorma	59.2	19.2	21.6	100.0	312	230
Mandingo	85.2	6.1	8.7	100.0	317	262
Mano	64.7	23.3	12.0	100.0	413	301
Other/None	62.3	12.3	25.4	100.0	880	694
All Women	62.6	18.4	19.0	100.0	5,239	5,239
Wtd. Number	3,282	964	993		5,239	

Education is inversely related to age, that is, older women are generally less well-educated than younger women. For example, whereas only 37 percent of women 15–19 have had no formal education, over 85 percent of women aged 35 and over are uneducated.

The proportion of respondents with no formal education is considerably higher in rural areas (75 percent) than in urban areas (46 percent). Liberian legislation provides compulsory schooling for all children up to 16 years of age; however, in the rural traditional setting, particularly among small farmers who constitute a majority of the rural populace, due to cultural belief and traditions, some families did not send their daughters to formal schools. This practice is gradually declining, as evidenced by the fact that younger women are better educated. Another factor influencing the urban-rural differential is that access to schools is more difficult in rural areas.

Although there is almost no difference between urban and rural areas in the proportion of women with primary education, there is a dramatic difference between urban and rural women who have achieved secondary level or higher education. The urban proportion (33 percent) is four times that of the rural (8 percent). This phenomenon is not surprising since there are very few secondary schools or colleges in the rural parts of Liberia. Most often, rural girls who have completed primary school would have to migrate to urban areas, particularly to Monrovia, or remain in the rural areas and get married.

Table 1.2 shows that Montserrado County has the smallest proportion of uneducated women (44 percent) as compared to 65 percent in Sinoe, 69 percent in Grand Gedeh, and 70 percent in the rest of the country. There is very little difference among the four subregions with regard to the proportion of women with primary education. However, a greater disparity is evident when it comes to secondary level or higher education. Over one-third of women in Montserrado County fall in this category, as compared to Sinoe (13 percent), rest of the country (13 percent), and Grand Gedeh with the least (7 percent). As mentioned earlier, this is consistent with the fact that there are many more high schools and post-secondary schools in Montserrado County than in any other county.

Table 1.2 indicates that one of every two Christian women is uneducated, compared to four of every five Muslim women and women with no religious affiliation. Furthermore, Christian women are more likely to have attended secondary or higher level institutions (29 percent) than women who are Muslim (9 percent), traditional/other (11 percent) or who have no religion (4 percent).

Three-fifths or more of women in the tribal groups with the exception of the Grebo (39 percent), the Kru/Sapo (46 percent), and the Krahn (55 percent) have had no formal education. More than one-fifth of women in these tribes as well as women in Lorma and the “other/none” category have been to secondary school. The Mandingo and the Kpelle have the lowest proportion—nine and 10 percent, respectively—who have attended secondary school or higher, while the remaining tribes report between 12 and 20 percent.



## 2. MARRIAGE AND EXPOSURE TO THE RISK OF PREGNANCY

### 2.1 Current Marital Status

In Liberia, as in most societies in the world, childbearing takes place mainly within socially prescribed and relatively stable marital unions. Thus, study of the patterns of marriage is essential to the understanding of fertility patterns in any society. In the Liberia Demographic and Health Survey, marriage was loosely defined to include any legal or customary union of a man and a woman as husband and wife, as well as other stable cohabitation, such as a man and a woman living together and having sexual relations without any legal or customary binding.

Table 2.1 shows that, based on the above definition of marriage, one out of every five respondents in the LDHS had never married, 67 percent were currently married, while the rest (11 percent) were either widowed, divorced, separated, or no longer living together.

Table 2.1 also shows the variations in marital status by current age of the respondents. As expected, the proportion of women who have never married decreases substantially with increasing age, from 64 percent of women 15–19 to only about one percent of those over the age of 35. The proportion of women reported as living together is considerably higher in each age group when compared to those legally married except for the latter three age groups. The extent of widowhood is relatively small, particularly in the younger age groups, 15–19 through 30–34 years. Similarly, the proportion of women divorced is small and increases with age.

TABLE 2.1 PERCENT DISTRIBUTION OF WOMEN BY CURRENT MARITAL STATUS, ACCORDING TO CURRENT AGE, LIBERIA, 1986

Age	Marital Status						Total Percent	Wtd. Number
	Never Married	Married	Living Together	Widowed	Divorced	No Longer Living Together		
15–19	64.0	9.7	22.0	0.4	1.4	2.5	100.0	1,137
20–24	24.7	20.2	45.3	0.1	2.5	7.1	100.0	1,030
25–29	7.9	34.2	45.1	0.6	3.2	9.0	100.0	1,081
30–34	6.2	38.3	43.5	1.7	3.5	6.8	100.0	658
35–39	1.2	42.4	43.1	2.4	4.5	6.4	100.0	626
40–44	1.7	40.3	39.7	6.6	4.4	7.3	100.0	327
45–49	0.5	51.0	30.8	6.2	5.7	5.8	100.0	380
All Ages	21.4	29.2	38.3	1.6	3.1	6.3	100.0	5,239

LDHS data on nuptiality can be compared with data from other sources in order to assess trends in marriage patterns and to evaluate the quality of data. Table 2.2 shows the proportions of women who have never married by age group, from the 1974 and 1984 censuses as well as from the LDHS.

TABLE 2.2. PERCENTAGE OF WOMEN WHO HAVE NEVER MARRIED BY AGE GROUP, LIBERIA, 1974, 1984, AND 1986

Age	1974 <sup>a</sup> Census	1984 <sup>b</sup> Census	1986 LDHS
15-19	57.7	64.3	64.0
20-24	21.4	29.1	24.7
25-29	9.1	13.9	7.9
30-34	5.0	7.3	6.2
35-39	3.6	4.5	1.2
40-44	3.0	3.6	1.7
45-49	2.8	3.1	0.5
All Ages	19.8	25.7	21.4

<sup>a</sup> From MPEA, 1977, Table 9

<sup>b</sup> From MPEA, 1987

The data show a substantial increase between 1974 and 1984 in the proportion of women at each age group who have never married, which implies that the age at marriage has been rising. This trend appears to reverse between 1984 and 1986, with a decrease in the proportions never married; however, at least some of the differences between 1984 and 1986 reflect definitional differences. Although the intent in both the censuses and the LDHS was to define marriage so as to include consensual unions, the census forms did not give the wording of questions and, since the codes given on the form for marital status were "never married," "married," "widowed," and "divorced/separated," is likely that many enumerators merely asked respondents if they were married, without explaining that consensual unions were to be included as marriages. In the LDHS, respondents were first asked if they had ever been married or lived with a man, and, if yes, whether they were currently married, living with a man, widowed, divorced, or no longer living together. Because the LDHS questions explicitly covered consensual unions, it is likely that they resulted in somewhat higher estimates of marriage than the censuses.

## 2.2 Polygyny

In the LDHS, women who were either legally or traditionally married or living together with men were asked whether their husbands/partners had other wives. The analysis of their responses

TABLE 2.3 PERCENTAGE OF CURRENTLY MARRIED WOMEN WHO ARE IN POLYGYNOUS UNIONS, BY AGE, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
<u>Urban-Rural</u>								
Urban	29.9	26.1	25.7	36.9	32.9	26.2	39.6	30.2
Rural	34.0	38.3	45.9	43.7	46.0	44.1	43.9	42.6
<u>Region</u>								
Sinoe	20.0	25.0	36.4	44.2	41.5	40.8	40.0	35.4
Grand Gedeh	34.7	50.4	53.4	62.4	63.6	54.2	64.1	55.4
Montserrado	25.0	22.1	19.3	33.3	27.1	21.4	42.0	25.8
Rest of country	35.7	37.2	43.2	41.1	43.6	41.9	39.9	40.7
<u>Education</u>								
No education	36.1	40.0	42.4	44.7	43.8	41.8	45.3	42.4
Primary	27.5	31.2	38.5	33.7	32.9	34.7	20.2	31.9
Secondary or more	23.0	18.3	16.8	19.6	21.5	*	*	18.5
<u>Religion</u>								
Christian	26.3	27.7	33.0	37.5	33.3	38.5	45.6	33.7
Muslim	51.0	49.6	47.6	50.5	59.1	52.1	54.3	51.0
Trad'l/Other	28.4	23.4	29.2	33.2	41.3	34.1	35.8	31.5
None	28.8	39.4	44.0	45.3	47.3	39.1	35.0	40.8
<u>Tribe</u>								
Bassa	33.3	25.0	43.8	43.1	43.2	43.0	44.4	39.0
Gio	33.3	30.4	37.3	34.3	39.4	*	45.8	36.0
Gola	*	*	34.8	*	23.1	*	*	23.9
Grebo	33.5	27.3	36.5	41.1	48.2	62.1	61.8	41.3
Kpelle	17.1	26.2	30.7	36.6	30.7	48.6	35.2	31.2
Krahn	23.0	39.9	53.7	70.4	46.8	42.5	69.8	47.4
Kru/Sapo	22.1	20.4	20.7	40.3	26.5	27.8	46.2	27.8
Lorma	*	49.7	51.6	48.3	50.0	*	*	44.7
Mandingo	60.9	56.1	55.4	45.8	64.6	*	*	57.4
Mano	34.8	38.8	22.0	28.5	50.0	50.0	30.4	34.2
Other/None	40.5	38.5	41.2	42.8	48.6	34.2	42.2	41.6
All Women	32.4	33.7	37.7	40.8	41.2	39.9	42.6	38.0

\*Fewer than 20 unweighted cases



reveals that 38 percent of these women are in polygynous unions (see Table 2.3). Unfortunately, there are no other sources of demographic information to which these data can be compared to detect any trend over time. However, the table shows that the prevalence of polygynous unions in Liberia increases slightly with the age of the women, which may indicate that the practice of polygyny is gradually eroding. On the other hand, the data might merely reflect the fact that as women get older, their husbands are more likely to take second wives.

Polygyny is more common in rural Liberia (43 percent of currently married women) than in the urban areas (30 percent). In rural Liberia, where people are predominantly farmers, the basic theories as to why polygyny is prevalent are that men want many wives, not only to enhance their political and economic status, but also to satisfy their desire for children. The more wives a man has, the stronger he is considered, the larger his farm (each wife cultivates a plot of land) and the greater the number of his children.

It is somewhat surprising that the proportion of polygynous unions in urban areas is as high as reported. First of all, it might be assumed that the economic incentive for polygyny is less in urban areas where life is more competitive and the cost of living much higher than in rural areas. Moreover, urban residents are primarily engaged in economic activities apart from farming, thus eliminating the need for wives to cultivate plots of land. Nonetheless, the desire for children is one of the ultimate goals of most Liberian unions; even in monogamous unions, many men have children outside marriage by their girlfriends. In this type of situation, married women or women living together with a man, get to know who their husband's girlfriends are and may have reported them as other "wives." Hence, it is possible that not all of the polygynous unions reported in the LDHS are stable, cohabiting unions, but may include somewhat more casual liaisons.

There are large differences in the extent of polygyny between regions. Over one-half of the married women in Grand Gedeh County are in polygynous unions, compared to 35 percent in Sinoe County, 26 percent in Montserrado County, and 41 percent in the rest of the country. To some extent, these regional differences reflect differences in the age, urban-rural, and ethnic composition of the women in the counties. Table 2.3 further reveals that polygyny is inversely related to educational attainment such that uneducated women are more likely to be polygynous than women who have attained secondary or higher level of education. Since education and urban-rural residence are highly correlated, it is difficult to state the separate effects of these two variables on polygyny.

A higher proportion (51 percent) of Muslim women than Christian women (34 percent) are in polygynous unions. Although polygyny is contrary to the Christian religion, no attempt was made in the survey to measure the degree of devotion to any of the religious beliefs. Thirty-two percent of women in other or traditional religions and 41 percent of women who do not have any religious affiliation are in polygynous marital unions. Differences in the extent of polygyny by tribal groups range from a high of 57 percent among the Mandingo to a low of 24 percent among the Gola tribe.

## **2.3 Age at First Union**

All women who had ever been in either a legal or consensual union were asked the month and year when they started living with their first partners; if they could not remember the year, they were asked how old they were. Caution should be taken in interpreting the responses, since, as in

most developing countries, people have difficulty placing events in time. In the LDHS, 32 percent of ever-married women reported both a month and year of first marriage, 37 percent gave the year only, and 29 percent gave their age. Less than two percent of the respondents had the dates of their first marriage imputed, mostly relying on the dates of their first births.

Another note about age at marriage concerns the custom of sending girls to live in the households of their future husbands at a young age. A small proportion of women reported very young ages at marriage due to this custom. Although the marriage was presumably not consummated until the girls matured, and therefore, they were not at risk of becoming pregnant, the data have been left as reported.

Table 2.4 shows the distribution of women by age at first marriage. Fifty percent of Liberian women enter into marriage before reaching age 18. An additional 12 percent first marry between the ages of 18–19 years, while 17 percent marry at age 20 or older.

TABLE 2.4 PERCENT DISTRIBUTION OF WOMEN BY AGE AT FIRST UNION AND MEDIAN AGE AT FIRST UNION, ACCORDING TO CURRENT AGE, LIBERIA, 1986

Current Age	Never Married	Age at First Union						Total Percent	Wtd. Number	Median Age*
		<15	15-17	18-19	20-21	22-24	25+			
15-19	64.0	11.6	21.0	3.4	-	-	-	100	1,137	-
20-24	24.7	16.6	31.7	15.8	7.5	3.7	-	100	1,030	18.2
25-29	7.9	16.3	35.0	17.3	11.1	8.6	3.9	100	1,081	17.9
30-34	6.2	19.2	38.2	13.4	10.1	8.8	4.1	100	658	17.2
35-39	1.2	15.6	39.5	14.3	10.4	9.1	9.9	100	626	17.2
40-44	1.7	29.1	40.5	10.9	4.3	7.6	5.8	100	327	16.0
45-49	0.5	19.4	41.4	8.7	12.0	7.2	10.8	100	380	16.6
All Ages	21.4	16.6	33.1	12.1	7.4	5.7	3.7	100	5,239	-

- Omitted due to censoring

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

It can also be seen in Table 2.4 that younger women have a higher median age at first union than older women, which implies that age at marriage in Liberia has been increasing over time. This hypothesis is consistent with the report that the median age at marriage increased by about 1 year among females in the 1962–1974 intercensal period in Liberia (U.S. Bureau of the Census, 1982), as well as with the data presented in Table 2.2 on the increase in the proportions never married by age between the 1974 and 1984 censuses.

Regarding differentials in age at first marriage, Table 2.5 presents the median ages at first marriage for women aged 25–49 according to background characteristics of the women. The data show a higher median age at first marriage among urban women (18.5 years) than rural women (16.8 years). There is also an indication of an upward trend in age at first marriage among younger women in both urban and rural areas, although it is more pronounced among urban women.

An examination of differentials by county reveals that Grand Gedeh County has the lowest median age at marriage (16.4 years), with Sinoe County (17.6 years) and the rest of the country (17.0 years) reporting slightly higher ages at first marriage. Montserrado County displays the highest median age at marriage (18.8 years) and this pattern extends throughout all age groups.

Education is highly correlated with age at first marriage (Table 2.5). The higher the level of education, the higher the median age at first marriage. At each age group, women with no education marry at much younger ages than women who have attended secondary school.

Among religious groups, Christians report the highest median age at first marriage (18.0), while there is no real difference in median age at first marriage for the other three categories. Median ages at marriage by tribal groups are also shown in Table 2.5. These ethnic variations suggest that the Mano, Gio, Gola, Krahn, Mandingo, and Bassa marry earlier than women of other tribes. Distribution by age group seems to suggest a pattern of higher age at first marriage among younger women in some of the tribes. The remaining tribes show an irregular pattern, particularly among the older women who report relatively high ages at first marriage. This kind of inconsistency may be due to memory lapse on the part of older women who could not remember their ages at first marriage. It is also possible that older women are reporting their age of entry into legal marriage as opposed to when they first started living with a man.

## 2.4 Exposure to the Risk of Pregnancy

Although marriage patterns have an effect on fertility and family planning use, the concept of “exposure” to the risk of pregnancy is important in further refining the population of women who are of concern to family planning program administrators. Women are defined as potentially exposed to the risk of pregnancy if they are sexually active, ovulating, and fecund. In terms of the LDHS, sexual activity is measured directly by questions on when the respondent last had sexual intercourse. Since determining whether or not a woman is ovulating requires clinical testing, ovulation is measured indirectly in the LDHS, by questions on menstruation. Thus, women who are pregnant or whose periods have not returned after the birth of their last child are considered to be not ovulating. Similarly, infecundity, or the inability to conceive, is measured indirectly, by the absence of a birth for at least five years despite the non-use of family planning.

Table 2.6 gives the distribution of currently married women by exposure status and age group. It should be noted that, due to the hierarchical nature of the exposure categories, they are not mutually exclusive (e.g., a woman may be both sexually inactive and infecund), and a somewhat different distribution would result if the order of the categories were changed.

Fifteen percent of currently married women in Liberia are pregnant. As one would expect, the proportion currently pregnant declines with increasing age, ranging from over 22 percent among women in age group 15-19 to only five percent among those in the 45–49 age group. Amenor-

TABLE 2.5 MEDIAN AGE AT FIRST UNION AMONG WOMEN AGED 20-49 BY CURRENT AGE, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Current Age						Women Aged 20-49
	20-24	25-29	30-34	35-39	40-44	45-49	
<u>Urban-Rural</u>							
Urban	19.7	18.6	17.6	17.7	16.9	18.2	18.5
Rural	17.2	17.3	16.9	16.8	15.9	16.2	16.8
<u>Region</u>							
Sinoe	17.5	17.4	17.1	19.6	16.8	17.2	17.6
Grand Gedeh	17.3	17.4	16.5	15.7	15.6	16.3	16.4
Montserrado	20.0	19.0	17.8	18.1	16.8	18.8	18.8
Rest of country	17.5	17.3	17.0	16.9	15.9	16.0	17.0
<u>Education</u>							
No education	17.4	17.3	16.9	16.8	15.9	16.3	16.8
Primary	17.2	17.2	17.7	18.3	17.8	17.5	17.3
Secondary or more	22.2	20.1	19.7	18.8	*	*	20.5
<u>Religion</u>							
Christian	19.4	18.5	17.3	17.7	16.0	17.0	18.0
Muslim	17.7	17.4	16.2	16.1	15.6	16.5	16.8
Trad'l/Other	16.8	17.1	17.2	16.8	16.1	16.6	16.9
None	17.1	16.8	17.6	16.9	16.1	16.0	16.9
<u>Tribe</u>							
Bassa	18.2	17.2	16.6	17.8	16.3	17.8	17.3
Gio	16.8	16.9	15.4	15.9	*	15.1	16.0
Gola	19.5	18.0	*	16.0	*	*	16.7
Grebo	19.2	19.1	17.3	15.8	15.8	15.7	17.6
Kpelle	18.5	18.2	18.3	18.6	17.6	18.9	18.3
Krahn	17.5	16.9	17.9	17.2	15.6	16.5	16.9
Kru/Sapo	19.3	18.9	18.0	18.0	16.3	17.3	18.2
Lorma	19.3	17.5	17.9	18.0	*	*	17.9
Mandingo	17.1	17.3	16.3	18.6	*	*	17.0
Mano	16.6	15.7	15.6	*	14.8	14.9	15.7
Other/None	19.2	18.6	17.5	17.9	16.9	17.1	18.3
All Women	18.2	17.9	17.2	17.2	16.0	16.6	17.5

\* Fewer than 20 unweighted cases

menstrual women are defined as those who have not menstruated since their last birth. About 24 percent of married respondents said they were amenorrheic. The higher percentages reported among the younger age groups reflect their higher fertility rates.

TABLE 2.6 PERCENT DISTRIBUTION OF CURRENTLY MARRIED WOMEN BY EXPOSURE STATUS, ACCORDING TO AGE, LIBERIA 1986

Exposure Status	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Pregnant	22.3	18.9	19.2	13.3	12.8	7.0	4.8	15.4
Amenorrheic	21.7	28.2	28.1	26.7	22.1	13.5	7.5	23.5
Infecund	0.9	4.6	10.2	17.8	23.7	47.5	56.2	18.1
Sexually inactive	14.2	12.5	10.0	10.4	10.0	7.5	6.9	10.5
Exposed	41.0	35.7	32.5	32.0	31.3	24.4	24.6	32.5
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wtd. Number	360	675	857	539	535	261	311	3,538

Women are considered infecund if they did not have a birth in the five years preceding the survey and had never used any form of birth control. This definition is not very precise, as it may include some fecund women who have not had a birth because they are not sexually active or have had miscarriages, etc., and may exclude some menopausal women who had a birth during the five years before the survey or ever used family planning. In any case, according to this definition, about 18 percent of women are not exposed due to infecundity. As expected, the proportion infecund is very low in the younger age groups and increases in the older ages, particularly in age groups 40-44 (48 percent) and 45-49 (56 percent).

Approximately ten percent of women are not exposed because they are not sexually active. The proportion of women who have not had sexual intercourse in the last four weeks seems to decrease with increasing age of respondents; however, this pattern is most likely due to the fact that many of the older women who are not sexually active have already been classified as infecund, if they have not had a birth in the last five years.

After extracting the preceding categories, the residual gives the proportion of currently married women exposed to conception which, in Liberia, is 33 percent. Although the proportion is higher among younger women, even older women seem to have relatively high proportions susceptible to becoming pregnant (about one-quarter of women aged 40-49). This implies that the provision of family planning services should not be limited to young women, but should also be extended to older women, although it should be noted that some of these women might want to have another child or might already be using some method of family planning. Family planning need is discussed in Chapter 5.

Table 2.7 shows the percent of all women currently exposed to the risk of pregnancy by marital status. According to this table, 35 percent of all women 15–49 are exposed to the risk of pregnancy. An almost equal proportion of women who are either currently or formerly married are exposed. The high proportions of never-married women who are at risk are disturbing, since most never-married women fall into the first two age groups. These data imply that efforts to reduce teenaged pregnancies should include single women.

TABLE 2.7 PERCENTAGE OF WOMEN WHO ARE CURRENTLY EXPOSED TO THE RISK OF PREGNANCY, BY MARITAL STATUS, ACCORDING TO AGE, LIBERIA, 1986

Age	Marital Status			Total
	Currently	Formerly	Never	
15–19	41.0	49.1	40.2	40.7
20–24	35.7	49.7	52.1	41.1
25–29	32.5	46.8	39.7	34.9
30–34	32.0	23.3	58.2	32.5
35–39	31.3	27.7	*	30.5
40–44	24.4	19.8	*	23.6
45–49	24.6	6.2	*	21.2
All Ages	32.5	34.0	43.1	34.9

\*Fewer than 20 unweighted cases

## 2.5 Breastfeeding, Postpartum Amenorrhea, and Abstinence

The LDHS collected data on several factors other than contraception that affect the length of pregnancy intervals; namely, breastfeeding, amenorrhea, and sexual abstinence. The information was obtained for the open interval (the interval since the last birth), for all women who had a live birth during the five years prior to the survey and was analyzed for all births within the 36 months prior to the survey. There were 3,249 weighted births occurring 0–35 months prior to the survey. The median durations of breastfeeding, amenorrhea and abstinence were calculated directly from the data given in Table 2.8. Mean durations of these variables, however, were calculated using the “current status” method, by dividing the total number of women breastfeeding, amenorrheic, or abstaining) by the average number of births per month over the past 36 months.

Table 2.8 gives the proportion of women still breastfeeding, amenorrheic, and abstaining, by months since the birth. The results show that the practice of breastfeeding is very common among

Liberian women. Most women breastfeed their children for long periods, although the proportion still breastfeeding diminishes significantly after 17 months. The mean and median duration of breastfeeding are almost identical at 17 months. The average breastfeeding duration in Liberia is similar to that of other sub-Saharan countries, such as Benin (19 months), Cameroon, Ghana, Ivory Coast, and Senegal (18 months), and Kenya (17 months) (Singh and Ferry, 1984: 21).

TABLE 2.8 PROPORTIONS OF WOMEN STILL BREASTFEEDING, POSTPARTUM AMENORRHEIC, AND ABSTAINING, BY MONTHS SINCE BIRTH, AND MEDIAN AND MEAN DURATIONS OF BREASTFEEDING, AMENORRHEA AND ABSTINENCE, LIBERIA, 1986

Months Since Birth	Still Breast-feeding	Still Amen-orrheic	Still Abstain-ing	Weighted Number of Births
0-1	93.4	86.0	98.1	189
2-3	87.1	72.7	88.2	234
4-5	88.3	66.5	80.1	208
6-7	75.1	52.9	68.3	243
8-9	74.9	48.1	53.9	250
10-11	65.4	38.0	51.8	209
12-13	60.9	34.5	34.3	204
14-15	55.8	30.1	31.9	183
16-17	51.9	16.6	21.7	157
18-19	27.1	8.3	10.7	133
20-21	22.4	4.4	7.2	155
22-23	16.5	6.0	5.9	141
24-25	12.5	4.5	7.3	167
26-27	8.4	3.2	3.9	184
28-29	5.8	3.0	1.2	167
30-31	4.3	2.1	4.4	143
32-33	4.6	2.0	2.0	138
34-35	2.0	1.2	0.0	145
Total	47.2	30.9	36.7	3,249
Median	16.7	7.7	10.7	
Mean	17.0	11.2	13.2	

The period following a birth before the return of the menstrual cycle of a woman is usually referred to as the period of postpartum amenorrhea. In most societies, this period lasts about two to three months, during which time the woman is usually infecund. However, the length of time during which a woman is amenorrheic depends to a large extent on her physiological condition and such factors as nutrition, and the length of breastfeeding. The results in Table 2.8 indicate that the median duration of postpartum amenorrhea for Liberian women is about eight months and the

mean is eleven months. The mean is similar to that of other African countries such as Benin, Cameroon, and Ghana (12 months), and Ivory Coast and Kenya (10 months). Table 2.8 shows that among respondents who gave birth within three years prior to the survey, almost 30 percent had resumed their menstrual cycles within a period of 2–3 months since birth, while about 48 percent had resumed by 8–9 months. Fewer than 5 percent reported that they were still amenorrheic two years after the birth of the child.

In many areas of sub-Saharan Africa, postpartum sexual abstinence is widely practiced. The duration is usually tied to ongoing breastfeeding which is considered essential to the health and normal development of the child. The results in Table 2.8 indicate that postpartum sexual abstinence is generally long in Liberia with a median duration of 11 months. This is three months longer than the median duration of postpartum amenorrhea, and indicates that the period of postpartum protection from pregnancy is determined more by abstinence than by amenorrhea.

Differentials in the mean duration of breastfeeding, amenorrhea, and abstinence by background characteristics of the mother are presented in Table 2.9. Women under age 30 breastfeed their children an average of two and one-half months less than women aged 30 and over. To the extent that this represents a trend toward shorter breastfeeding durations, it is a disturbing finding. Although breastfeeding durations are relatively long in any case, a trend toward shorter durations can have adverse effects on child health, since breastmilk provides children with protection against certain illnesses. Urban women breastfeed their children an average of five months less than rural women (14 vs. 19 months). This urban-rural differential also underlies the much shorter average duration of breastfeeding among women in Montserrado County (13 months), than for women in other regions. Montserrado County contains Monrovia, where many women are engaged in economic activities and/or school, which tend to reduce the length of time that they can afford to breastfeed their children.

Studies have shown that educated women are unlikely to breastfeed for long durations, primarily due to their greater participation in the labor force. This is confirmed in the case of Liberia, where women with secondary or higher education breastfeed their children for an average of only 10 months, as compared to 17 months for women with primary education and 19 months for women with no education.

Differentials by religion show that Christian women breastfeed for slightly shorter durations than women of other religious affiliations, which reflects their higher educational status. Among the tribal groups, the average durations of breastfeeding range from a low of 15 months for Kru/Sapo, Gio, and Grebo women to a high of 19 months for Kpelle, Lorma, and Mandingo women.

Breastfeeding tends to suppress the return of menstruation following a birth, thereby lengthening the period of amenorrhea. This relationship is clearly seen from the data in Table 2.9, where the average durations of postpartum amenorrhea follow a similar pattern to those of breastfeeding. Thus, as with breastfeeding durations, durations of amenorrhea are shorter among younger women, urban women, women who live in Montserrado County, those who are better educated, Christian, or from the Bassa, Kru/Sapo, or Grebo tribes.

Differentials in duration of postpartum abstinence generally are not as large as those for breastfeeding and amenorrhea, although they tend to follow a similar pattern. Most women report durations of abstinence of about 11 or 12 months. The major exceptions to this pattern are women



TABLE 2.9 MEAN DURATION OF POSTPARTUM BREASTFEEDING, AMENORRHEA, AND SEXUAL ABSTINENCE (CURRENT STATUS ESTIMATE BASED ON BIRTHS WITHIN 36 MONTHS OF THE INTERVIEW DATE), ACCORDING TO BACKGROUND CHARACTERISTICS OF MOTHER, LIBERIA, 1986

Characteristic	Breastfeeding	Amenorrhea	Abstinence	Wtd. No. of Births
<u>Age</u>				
< 30	16.2	10.6	13.1	2,212
30+	18.7	12.4	13.4	1,055
<u>Urban-Rural</u>				
Urban	14.1	9.2	12.1	1,334
Rural	18.9	12.6	13.9	1,933
<u>Region</u>				
Sinoe	17.3	9.8	12.6	98
Grand Gedeh	21.5	13.2	14.0	198
Montserrado	12.9	8.3	11.3	823
Rest of country	18.1	12.2	13.9	2,148
<u>Education</u>				
No education	18.6	12.4	14.1	2,150
Primary	17.1	11.1	13.7	598
Secondary or more	10.0	6.4	9.0	519
<u>Religion</u>				
Christian	15.8	10.5	11.7	1,627
Muslim	18.4	11.4	15.8	521
Trad'l/Other	17.3	11.3	15.0	661
None	18.6	12.8	12.9	459
<u>Tribe</u>				
Bassa	16.1	9.4	10.8	436
Gio	14.7	11.3	11.7	247
Gola	18.2	14.4	15.2	131
Grebo	15.4	10.0	8.7	232
Kpelle	19.1	12.1	14.1	554
Krahn	18.1	11.5	13.7	153
Kru/Sapo	14.6	9.9	10.4	335
Lorma	18.5	13.4	17.5	159
Mandingo	18.9	11.5	15.8	213
Mano	17.2	12.0	13.2	248
Other/None	16.7	11.0	15.6	560
Total	17.0	11.2	13.2	3,267

with secondary or higher education, who abstain for only 9 months, and, surprisingly, Muslim women who abstain for almost 16 months on average. There is also some variation by tribe, with Grebo, Kru/Sapo, and Bassa women reporting shorter than average durations of abstinence, and Lorma and Mandingo women reporting longer durations.



## 3. FERTILITY

### 3.1 Fertility Data

Information about fertility levels, trends and differentials was one of the most important topics to be covered in the LDHS. Several questions were asked to derive the total number of live births for each respondent. First, each woman was asked the number of sons and daughters living with her, the number living elsewhere, and the number who had died. Then she was asked for a history of all her births, including the month and year each was born, the sex, the name, and, if dead, the age at death, and, if alive, whether he/she was living with the mother.

Although the birth history approach is an accepted and widely used method of collecting fertility data, it has limitations and is susceptible to data collection errors. One problem is that events to non-surviving women are not collected. A second problem is that, for earlier time periods, information on births to women in the older ages of childbearing are not collected. Neither of these problems is considered serious for time periods close to the survey date. Moreover, in order to minimize the effect of the latter problem, total fertility rates presented in this report have been calculated for women aged 15–44, instead of the customary 15–49 age group.

Defects in data collection take the form of underreporting of births (especially those that die in early infancy) and misreporting of date of birth. Fertility levels can be affected by underreporting, while misreporting of dates of births can seriously distort estimates of trends in fertility over time. There is some indication that in the LDHS, births occurring four and five years prior to the survey may have been shifted to six years before the survey, presumably so as to avoid the necessity of filling in the health section for those children.

### 3.2 Levels and Differentials in Fertility

LDHS data indicate that the total fertility rate in Liberia is 6.5 children per woman. This means that if current age-specific fertility rates were to stay constant, Liberian women would have an average of six and one-half live births by the time they reached the age of 45. This level is slightly higher than the rate of 6.1 that was found in the 1970–71 Liberian Population Growth Survey (Republic of Liberia, 1971: 9) and of 6.2 that was estimated from 1974 Census data (University of Liberia and MPEA, 1981: T-63) for women 15–44. Thus, LDHS data imply that fertility in Liberia has been more or less constant in the recent past, and may be increasing slightly.

Table 3.1 presents the total fertility rates (TFR) for two calendar year periods (1983–1986 and 1980–1982) and for the five years preceding the survey, as well as the mean number of children ever born (CEB) to women 40–49 years old, according to background characteristics of women. Caution should be exercised in comparing these rates, as the average number of births to women 40–49 refers to past or completed fertility, while total fertility in the preceding five years refers to a more current measure of fertility.

Comparing the last two columns of the table confirms that fertility has not changed significantly in the recent past. The average number of births to women 40–49 is 6.4 while the total fertility rate five years before the survey is almost the same at 6.3 children. A comparison of children ever born and fertility 0–4 years before the survey, according to background characteristics, suggests

TABLE 3.1 TOTAL FERTILITY RATES FOR 1983-86, 1980-82, AND THE FIVE-YEAR PERIOD IMMEDIATELY PRIOR TO THE SURVEY AND MEAN NUMBER OF CHILDREN EVER BORN TO WOMEN 40-49, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Total Fertility Rate <sup>a</sup>			Mean No. Children Born to Women 40-49
	1983-86 <sup>b</sup>	1980-82	0-4 years before survey	
<u>Urban-Rural</u>				
Urban	6.1	6.3	5.9	6.6
Rural	6.8	6.9	6.6	6.3
<u>Region</u>				
Siное	7.1	7.8	7.1	7.2
Grand Gedeh	7.4	7.7	7.3	7.0
Montserrado	5.6	6.1	5.5	6.4
Rest of country	6.7	6.7	6.5	6.2
<u>Education</u>				
No Education	6.7	6.8	6.4	6.3
Primary	7.0	7.7	7.0	7.1
Seco'n'y or more	4.8	4.9	4.7	6.3
<u>Religion</u>				
Christian	6.0	6.7	6.0	6.3
Muslim	6.8	6.6	6.3	6.9
Trad'l'l/Other	7.1	7.0	6.8	6.8
None	7.1	6.5	6.6	5.9
<u>Tribe</u>				
Bassa	6.7	6.7	6.5	5.6
Gio	6.3	6.3	6.1	5.9
Gola	5.9	7.2	5.7	7.3
Grebo	6.7	7.0	6.5	6.8
Kpelle	6.9	7.0	6.7	7.1
Krahn	7.2	7.5	7.1	6.4
Kru/Sapo	6.1	7.2	6.4	6.9
Lorma	5.6	5.9	5.2	*
Mandingo	6.0	6.7	6.0	*
Mano	6.4	6.5	6.2	5.0
Other/None	6.7	6.4	6.3	6.7
Total	6.5	6.7	6.3	6.4

\* Fewer than 20 unweighted cases

<sup>a</sup> Based on births to women aged 15 to 44

<sup>b</sup> Includes births occurring in 1986, up to the time of the survey

that fertility is declining among urban women, women in Montserrado County, women with secondary education, Muslims, and women from the Gola and Kru/Sapo tribes.

Total fertility rates for all three time periods indicate that urban fertility is lower than rural fertility. Based on births in the five years before the survey, women in urban areas have a total fertility rate of approximately six births while rural women have about six and one-half births. The fact that the mean number of children ever born to women 40–49 is higher for urban women may be due to poor recall among older, rural women. Regional differences in total fertility rates indicate that women in Grand Gedeh and Sinoe Counties have substantially higher fertility—well above seven births per woman—than women living either in Montserrado or in the rest of the country. This is true for the measures of current fertility as well as the average number of children born to women 40–49. The lowest fertility rates are reported in Montserrado County, with an average of fewer than six births per woman.

In terms of education, it is interesting to note that the fertility of women with some primary education is higher than for those with no education and substantially higher than the fertility of women with secondary education. Although this pattern is quite common in African countries, its determinants are not readily explainable, since LDHS data on age at marriage, duration of postpartum amenorrhea and abstinence, and use of contraception imply that the fertility of women with primary education should be intermediate to that of women with no education and women with secondary education. In fact, however, it appears that more educated women initiate childbearing at an earlier age than do those with no education (see Table 3.6). It is also possible that the relationship is due to greater pregnancy wastage and/or underreporting of births among women with no education. A more detailed study of the survey data might provide an explanation for this phenomenon.

Christian women generally have somewhat lower fertility than Muslim women or women in traditional or other sects. Comparison of fertility levels among the tribes is not straightforward due to the varying sample sizes. In terms of current fertility, the tribe that has the highest level is the Krahn, with a total fertility rate of about seven children per woman. Other tribes with high fertility are the Kpelle, Grebo and Bassa. Those with the lowest fertility are the Lorma.

Looking at measures of completed fertility, some of the tribes that currently have high levels of fertility have had much lower levels in the past. This is true for the Mano and Bassa tribes. The Gola indicated the highest completed mean fertility of 7.3 children; the Liberia Population Growth Survey and various researchers have also reported this phenomenon (Chieh-Johnson, 1987).

### **3.3 Fertility Trends**

Table 3.2 presents age specific fertility rates for five-year periods prior to the survey, based on data from the birth histories. To compute the numerator for these rates, births were classified by the segment of time preceding the survey (e.g., 0–4 years, 5–9 years prior, etc.), and by age of the mother at the time of birth. The denominator is the number of woman-years lived in the specified five-year age interval for each time segment. Because the LDHS only interviewed women up to age 50, the data in Table 3.2 become “truncated” the farther back in time, because information for women in older age groups is either incomplete or missing.

TABLE 3.2 AGE-SPECIFIC FERTILITY RATES (PER THOUSAND WOMEN) FOR FIVE-YEAR PERIODS PRIOR TO THE SURVEY, LIBERIA, 1986

Age of Women	Years Prior to the Survey						
	0-4	5-9	10-14	15-19	20-24	25-29	30-34
15-19	184	192	173	173	171	188	(118)
20-24	285	293	268	260	249	(263)	-
25-29	272	281	274	257	(299)	-	-
30-34	223	266	232	(291)	-	-	-
35-39	181	198	(210)	-	-	-	-
40-44	114	(180)	-	-	-	-	-
45-49	(63)	-	-	-	-	-	-
Cumulated Fertility 15-29	3.7	3.8	3.6	3.5	-	-	-

Note: Numbers in parentheses are partially truncated rates.

The data show a peak in fertility 5-9 years prior to the survey for all age groups. While it is possible that fertility rose and then fell, it is more likely that the peak is artificially created by misreporting of dates of births, namely, a shifting of births from the period 10-14 and/or 0-4 years prior to the survey to the period 5-9 years prior to the survey. Ignoring this peak, the cumulated rates for ages 15-29 show evidence of a slight increase in fertility over time, which is most pronounced at age group 20-24. This increase might be due in part to a decline in breastfeeding duration among younger women.

The data in Table 3.2 also indicate the extreme youthfulness of childbearing in Liberia. Almost 20 percent of teenage girls and over 25 percent of women 20-24 give birth in a given year. Such early childbearing has serious implications for both maternal and child health.

### 3.4 Children Ever Born

Completed family size in Liberia is quite high (see Table 3.3). By the time a Liberian woman reaches the end of her childbearing period (usually between ages 45-49), she would have given birth to about seven children (6.8). Just as marriage occurs relatively early, childbearing also occurs early, with teenage girls reporting an average of 0.5 births. The average number of live births increases with the woman's age. Women in their late twenties report just over three live births and women in their late thirties report an average of more than five births.

The distribution of women by number of births reveals that almost 40 percent of teenagers and 80 percent of women 20-24 have had at least one child. By the time women reach the end of childbearing, one-quarter have had ten or more live births. Primary infertility—the proportion of married women aged 45-49 who never have children—is quite low at about two percent.

TABLE 3.3 PERCENT DISTRIBUTION OF ALL WOMEN AND CURRENTLY MARRIED WOMEN BY NUMBER OF CHILDREN EVER BORN, ACCORDING TO AGE, LIBERIA, 1986

Age	Number of Children Ever Born											Total Percent	Wtd. No. of Women	Mean No. of Chil- dren
	0	1	2	3	4	5	6	7	8	9	10+			
<u>All Women</u>														
15-19	62.8	28.9	7.5	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,137	0.5
20-24	19.3	26.9	25.8	18.2	6.6	2.5	0.7	0.0	0.0	0.0	0.0	100.0	1,030	1.8
25-29	6.5	14.7	17.2	18.2	20.0	13.4	5.3	3.2	1.2	0.3	0.0	100.0	1,081	3.2
30-34	5.0	8.3	11.6	16.2	15.2	15.6	12.2	6.9	4.2	3.0	1.8	100.0	658	4.2
35-39	3.2	6.1	8.7	11.9	8.9	12.2	13.1	13.5	10.7	5.1	6.6	100.0	626	5.3
40-44	3.4	8.3	8.3	8.5	9.6	9.1	9.2	10.4	6.3	8.4	18.4	100.0	327	5.9
45-49	2.6	4.8	8.0	5.1	8.7	5.6	11.5	10.8	9.6	8.1	25.0	100.0	380	6.8
All Ages	20.2	17.2	13.9	11.8	9.7	7.6	5.7	4.6	3.2	2.1	4.0	100.0	5,239	3.1
<u>Currently Married Women</u>														
15-19	40.0	43.4	15.8	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	360	0.8
20-24	15.3	24.1	28.6	21.2	7.5	2.9	0.4	0.0	0.0	0.0	0.0	100.0	675	1.9
25-29	5.0	14.0	16.5	17.9	20.6	15.0	6.0	3.6	0.9	0.4	0.0	100.0	857	3.3
30-34	5.0	6.2	8.9	17.0	15.0	17.7	12.6	7.6	4.6	3.4	2.1	100.0	539	4.4
35-39	3.2	5.3	8.5	11.8	8.0	12.9	14.2	14.0	10.6	5.2	6.4	100.0	535	5.4
40-44	3.7	7.7	7.9	5.8	10.7	9.8	9.0	10.3	7.1	8.8	19.3	100.0	261	6.0
45-49	2.1	4.0	8.0	5.8	7.8	5.5	11.0	10.3	10.6	7.7	27.0	100.0	311	6.9
All Ages	9.9	15.1	15.0	13.7	11.4	10.0	7.2	5.8	4.0	2.7	5.1	100.0	3,538	3.8

The mean number of children ever born by age at first marriage and duration of marriage is given in Table 3.4. As expected, the mean number of children born rises with increasing marital duration. The results indicate that irrespective of the age at first marriage, a Liberian woman would have given birth to an average of almost three children during the first 5-9 years of her marriage.

At shorter marriage durations, the mean number of children ever born increases with age at marriage. This could be due to the fact that late-marrying women have had pre-marital births, or that they have shorter birth intervals due to shorter breastfeeding durations. At longer durations of marriage, the relationship between children born and age at marriage is erratic. One clear pattern in Table 3.4 is the lower mean number of children ever born for women who married below age 15, which probably reflects adolescent subfecundity.



TABLE 3.4 MEAN NUMBER OF CHILDREN EVER BORN TO EVER-MARRIED WOMEN AGED 15-49, ACCORDING TO AGE AT FIRST MARRIAGE AND YEARS SINCE FIRST MARRIAGE, LIBERIA, 1986

Years Since First Marriage	Age At First Marriage						All Ages
	<15	15-17	18-19	20-21	22-24	25+	
0-4	0.9	1.0	1.3	1.4	1.4	2.3	1.2
5-9	2.1	2.6	2.8	2.9	2.9	3.5	2.7
10-14	3.5	4.0	4.2	4.1	3.9	3.5	3.9
15-19	4.5	5.1	4.9	5.5	6.2	4.8	5.0
20-24	5.6	6.1	5.7	6.0	6.2	5.0	5.9
25-29	5.8	6.4	6.0	6.5	4.5	-	6.1
30 or more	7.4	7.5	6.0	-	-	-	7.4
All Years	4.1	4.0	3.3	3.5	3.3	3.3	3.8

### 3.5 Age At First Birth

The onset of fertility is an important demographic indicator. In many countries, the postponement of first births has had a large impact on overall fertility decline. Also, the proportion of women who become mothers in their teenage years is a basic indicator of maternal and child health. Table 3.5 shows the distribution of women by age at first birth and current age. The data show that over one-half of Liberian women become mothers before they reach age 20. This finding has serious health implications, since young mothers suffer more health problems than older mothers, and their children have higher mortality rates.

The data imply that age at first birth has been declining over time, with younger women having lower median ages at first birth. Although it is possible that childbearing is starting at younger ages than in the past, it should be noted that the data in Table 3.5 are heavily dependent on correct reporting of dates of birth of both the woman and her first birth. It is perfectly possible that older women had difficulties in remembering the dates of their first births and pushed them closer to the date of the survey, thereby making themselves older at first birth than they actually were. Another plausible explanation is that some women who were actually aged 40-44 at the time of the survey were recorded as being in the age group 45-49. This would have the effect of falsely increasing their age at first birth. For example, if a 43-year old woman whose first-born child is 23 years old, is erroneously recorded as being 48, her age at first birth would be calculated as 25, instead of 20. This latter hypothesis would also explain why there are more women 45-49 than 40-44. Given these likely defects in the data, it is uncertain whether age at first birth is in fact declining in Liberia; however, it is clear that childbearing starts at very young ages.

TABLE 3.5 PERCENT DISTRIBUTION OF ALL WOMEN BY AGE AT FIRST BIRTH, ACCORDING TO CURRENT AGE, LIBERIA, 1986

Current Age	Age At First Birth						No Births	Total Percent	Wtd. Number of Women	Median Age at First Birth
	<15	15-17	18-19	20-21	22-24	25+				
15-19	5.4	25.5	6.3	0.0	0.0	0.0	62.8	100.0	1,137	-
20-24	10.5	33.9	19.8	12.3	4.3	0.0	19.3	100.0	1,030	18.5
25-29	7.9	29.9	24.1	15.3	11.2	5.1	6.5	100.0	1,081	19.0
30-34	10.2	29.5	15.7	12.8	17.6	9.2	5.0	100.0	658	19.4
35-39	8.9	25.8	17.4	12.4	13.6	18.7	3.2	100.0	626	19.8
40-44	11.4	35.4	12.1	6.7	15.9	15.0	3.4	100.0	327	18.6
45-49	8.1	22.2	13.4	14.7	12.3	26.8	2.6	100.0	380	21.0
All Ages	8.5	29.0	16.0	10.2	8.9	7.3	20.2	100.0	5,239	-

- Omitted due to censoring

Table 3.6 presents data on differentials in age at first birth by background characteristics of women. Surprisingly, urban women generally start childbearing earlier than rural women. Also somewhat surprising is the fact that women with no education report the highest ages at first birth. While these findings may be due to data defects, it is also possible that better educated, urban women are less restricted by traditional restraints and initiate sexual activity sooner than their less educated, rural counterparts. Better educated, urban women presumably have better nutrition and medical care than less educated rural women, which may lead to earlier onset of menarche and a lower incidence of miscarriage and stillbirths. The differential in age at first birth by education may account for the higher fertility evidenced by women with primary education as compared to those with no education or secondary schooling (see Table 3.1).

TABLE 3.6 MEDIAN AGE AT FIRST BIRTH AMONG WOMEN AGED 20-49, ACCORDING TO CURRENT AGE AND BACKGROUND CHARACTERISTICS OF WOMEN, LIBERIA, 1986

Characteristic	Current Age						Ages 20-49
	20-24	25-29	30-34	35-39	40-44	45-49	
<u>Urban-Rural</u>							
Urban	18.7	18.9	18.9	19.1	17.8	20.7	18.9
Rural	18.3	19.1	19.9	20.2	19.1	21.1	19.3
<u>Region</u>							
Sinoe	17.6	18.0	18.2	21.6	17.9	18.6	18.3
Grand Gedeh	18.1	18.5	17.3	18.8	18.4	20.2	18.4
Montserrado	18.6	19.0	18.9	18.8	18.9	20.8	18.9
Rest of country	18.5	19.1	19.9	20.1	18.5	21.1	19.4
<u>Education</u>							
No education	18.8	19.3	19.7	20.1	19.1	21.0	19.5
Primary	18.1	17.9	18.5	18.3	16.5	19.4	18.1
Seco'n'y or more	18.2	18.8	19.1	18.7	*	*	18.7
<u>Religion</u>							
Christian	18.2	19.0	18.8	19.1	17.9	20.4	18.8
Muslim	20.1	19.4	19.9	20.5	18.5	21.5	19.9
Trad'l/Other	18.1	18.4	19.6	20.4	18.4	19.0	18.8
None	18.6	19.1	19.9	21.2	22.2	21.9	19.8
<u>Tribe</u>							
Bassa	18.6	18.2	17.9	19.0	19.3	19.5	18.6
Gio	17.1	18.4	18.0	24.0	*	21.9	18.9
Gola	17.5	19.2	*	19.5	*	*	19.3
Grebo	18.2	18.8	17.3	18.2	17.0	21.5	18.3
Kpelle	19.2	19.0	21.6	19.6	18.9	18.8	19.4
Krahn	17.8	18.1	18.7	18.8	18.3	19.8	18.4
Kru/Sapo	18.0	18.6	18.1	18.0	17.7	20.8	18.2
Lorma	19.5	20.1	19.3	20.0	*	*	19.9
Mandingo	20.2	20.1	20.6	24.7	*	*	20.8
Mano	17.9	18.8	22.1	21.0	20.7	25.0	19.4
Other/None	18.8	19.7	20.1	20.5	17.3	20.5	19.5
All Women	18.5	19.0	19.4	19.8	18.6	21.0	19.2

\* Fewer than 20 unweighted cases

## 4. CONTRACEPTIVE KNOWLEDGE AND USE

### 4.1 Contraceptive Knowledge

Because knowledge of contraceptive methods and of places where methods can be obtained are preconditions for their use, determining the level of knowledge of methods and service providers was a basic objective of the LDHS. The survey collected knowledge data first by asking the respondent to name the ways that a man or woman could keep a woman from getting pregnant. If a respondent did not spontaneously mention a particular method, the method was described by the interviewer and the respondent was asked if she recognized the method. Descriptions were included in the questionnaire for seven modern methods (the pill, IUD, injection, condom, vaginal methods (diaphragm, foam and jelly), female sterilization, and male sterilization) and two traditional methods (periodic abstinence (rhythm) and withdrawal). In addition, other methods mentioned by the respondent, e.g., herbs, were recorded. Finally, for any modern method that she recognized, the respondent was asked if she knew about a place or a person from which she could obtain the method. If she reported knowing about rhythm, she was also asked if she knew a place or person from which she could get information about the method.

The DHS results indicate that 72 percent of Liberian women know at least one contraceptive method (Table 4.1). They are more likely to report having heard about modern methods (70 percent) than traditional methods (30 percent). The pill—which 64 percent recognize—is the most widely known method. Considering other methods, more than 40 percent have heard about injection and female sterilization, while around 30 percent are familiar with the IUD and the condom. The percentages knowing about rhythm and withdrawal are the same—16 percent—compared to 13 percent recognizing folk methods and 12 percent knowing about vaginal methods. Only 6 percent say that they have heard about male sterilization. Surprisingly, knowledge of all methods except female sterilization is slightly lower among currently married women than among all women.

If women are to adopt family planning, they must not only know about methods but they must also be aware of a source from which they can obtain contraceptive services. In the LDHS, less than half of all respondents were familiar with a source from which modern methods or information about the use of the rhythm method could be obtained. Table 4.1 shows that the percentage knowing a source was highest in the case of injection (29 percent), female sterilization (28 percent) and the pill (27 percent) and lowest in the case of vaginal methods (9 percent), periodic abstinence (7 percent) and male sterilization (4 percent).

Table 4.2 indicates how the percentage of currently married women knowing any modern method and the percentage knowing a source vary among subgroups within the Liberian population. Both age and number of living children are related to contraceptive knowledge. The relationship with age is U-shaped, with knowledge levels highest in the 20–34 age groups. The percentage knowing a method or a source generally increases directly with the number of living children.

Urban women are more likely than rural residents to know about a method and to be able to name a source. By region, knowledge levels are highest in Sinoe County followed by Montserrado County. The fact that the proportions knowing any method and knowing a source are higher in Sinoe than in Montserrado County (which includes Greater Monrovia) likely reflects the fact

that prior to the LDHS, Sinoe County was the target of a special campaign by the Liberian Family Planning Association to increase contraceptive knowledge and use.

TABLE 4.1 PERCENTAGE KNOWING ANY CONTRACEPTIVE METHOD AND KNOWING A SOURCE (FOR INFORMATION OR SERVICES) FOR A METHOD AMONG ALL WOMEN AND CURRENTLY MARRIED WOMEN BY METHOD, LIBERIA, 1986

Method	Knowing Method		Knowing Source	
	AW	CMW	AW	CMW
Any Method	71.8	69.8	47.7	44.3
Any Modern Method	70.4	68.0	47.3	44.0
Pill	64.0	61.1	26.6	24.8
IUD	34.5	31.3	21.0	17.6
Injection	44.4	42.4	28.5	25.1
Vaginal methods	11.6	9.8	8.6	6.9
Condom	30.5	26.2	17.0	14.2
Female sterilization	41.0	41.7	27.7	27.4
Male sterilization	6.4	5.9	4.4	4.0
Any Traditional Method	30.0	27.8	-	-
Periodic abstinence	15.5	12.4	7.1	5.7
Withdrawal	15.5	13.4	-	-
Other methods	13.2	14.0	-	-

AW = all women      CMW = currently married women

Educational status differentials in contraceptive knowledge are substantial. For example, only 60 percent of currently married women who had never attended school knew any modern method, compared to 85 percent of those with some primary education and 95 percent of those with some secondary education. The religion to which a woman belongs is also associated with the level of contraceptive knowledge. Knowledge of modern methods is greatest among Christian women and least among Muslim women. However, those Muslim women knowing a method are more likely than women who profess no religion to know a source.

Table 4.2 also shows that contraceptive knowledge varies with a woman's tribe. The highest percentages knowing a method and knowing a source are found among women belonging to the Kru/Sapo and Grebo tribes. Other tribes for which knowledge levels exceed those reported for the country as a whole include the Bassa, Lorma, Gio, and Krahn.

TABLE 4.2 PERCENTAGE KNOWING ANY MODERN CONTRACEPTIVE METHOD AND PERCENTAGE KNOWING A SOURCE FOR MODERN METHODS AMONG CURRENTLY MARRIED WOMEN, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Knows Method	Knows Source	Characteristic	Knows Method	Knows Source
<u>Age</u>			<u>Education</u>		
15-19	53.2	27.0	No schooling	60.4	35.6
20-24	71.2	46.0	Primary	85.1	55.8
25-29	71.2	47.9	Secondary or more	94.9	80.9
30-34	73.8	50.1	<u>Religion</u>		
35-39	67.1	45.8	Christian	78.7	56.4
40-44	64.3	43.5	Muslim	49.4	32.7
45-49	64.0	35.4	Traditional/Other	72.9	40.0
<u>Living Children</u>			None	56.6	28.0
None	59.1	32.5	<u>Tribe</u>		
1	63.4	39.1	Bassa	75.1	41.4
2	65.6	45.5	Gio	69.8	30.8
3	71.4	45.4	Gola	53.2	38.5
4	70.6	45.6	Grebo	82.7	68.0
5	72.3	50.5	Kpelle	68.1	44.8
6 or more	78.8	54.4	Krahn	68.3	51.3
<u>Urban-Rural</u>			Kru/Sapo	86.4	66.5
Urban	76.8	56.5	Lorma	75.1	50.1
Rural	62.8	36.6	Mandingo	41.2	26.8
<u>Region</u>			Mano	63.5	30.2
Sinoe	87.2	65.4	Other/None	62.6	43.2
Grand Gedeh	64.1	49.2	<u>Total</u>		
Montserrado	77.3	58.2		68.0	44.0
Rest of country	64.4	37.7			

## 4.2 Ever Use of Contraception

The LDHS asked whether women had ever used each method that they knew and then obtained information on whether they were currently using a method, and, if so, the method that they were using. A total of 22 percent of all women reported that they had ever used a contraceptive method (Table 4.3). The level of ever use among currently married women (19 percent) is slightly lower than the level for all women. Among ever users, the majority have had experience with modern methods. The pill is by far the most frequently adopted modern method. Sixteen percent of women have used the pill, while the percentages reporting ever use of other modern methods do not exceed three percent.

TABLE 4.3 PERCENTAGE WHO HAVE EVER USED CONTRACEPTIVE METHODS AMONG ALL WOMEN AND CURRENTLY MARRIED WOMEN BY METHOD, LIBERIA, 1986

Method	All Women	Currently Married Women
Any Method	21.7	18.8
Any Modern Method	18.6	15.9
Pill	15.7	13.4
IUD	2.9	2.8
Injection	1.6	1.8
Vaginal methods	1.0	1.0
Condom	2.7	1.7
Female sterilization	1.0	1.1
Male sterilization	0.0	0.0
Any Traditional Method	8.3	6.7
Periodic abstinence	4.4	3.3
Withdrawal	4.2	3.4
Other methods	1.3	1.2

The percentage of women in Liberia who reported ever using a traditional contraceptive method—8 percent—is fairly low in comparison to the level of use of these methods in many other African countries. Looking at specific traditional methods, 4 percent of the LDHS respondents said they had employed periodic abstinence, an identical percentage said they had relied on withdrawal and less than 2 percent indicated that they had tried folk methods.

Successful practice of periodic abstinence is dependent upon a correct understanding of when in the ovulatory cycle a woman is most likely to become pregnant. Table 4.4 presents the distribution of all respondents and the small number of respondents who had ever used periodic abstinence by knowledge of the period in the ovulatory cycle when a woman is fertile. Almost two-thirds of the women said that they did not know when a woman was most likely to become pregnant. Ever-users of periodic abstinence seem to be much more knowledgeable about the ovulatory cycle, but, even in that group, only about one in five identified the fertile period as occurring in the middle of the cycle (“between two periods”). It should be noted that methods of dividing the ovulatory cycle are culture-specific and many of the women who were coded in the category “soon after period ends” may actually have a fairly accurate understanding of their fertile period.

### 4.3 Current Use of Contraception

Eight percent of the LDHS respondents indicated that they were currently using a contraceptive method (Table 4.5). As with ever-use, the contraceptive prevalence rate among currently married women is somewhat lower (6 percent) than among all women. Figure 4.1 gives an overview

TABLE 4.4 PERCENT DISTRIBUTION OF ALL WOMEN AND WOMEN WHO HAVE EVER USED PERIODIC ABSTINENCE BY KNOWLEDGE OF THE FERTILE PERIOD DURING THE OVULATORY CYCLE, LIBERIA, 1986

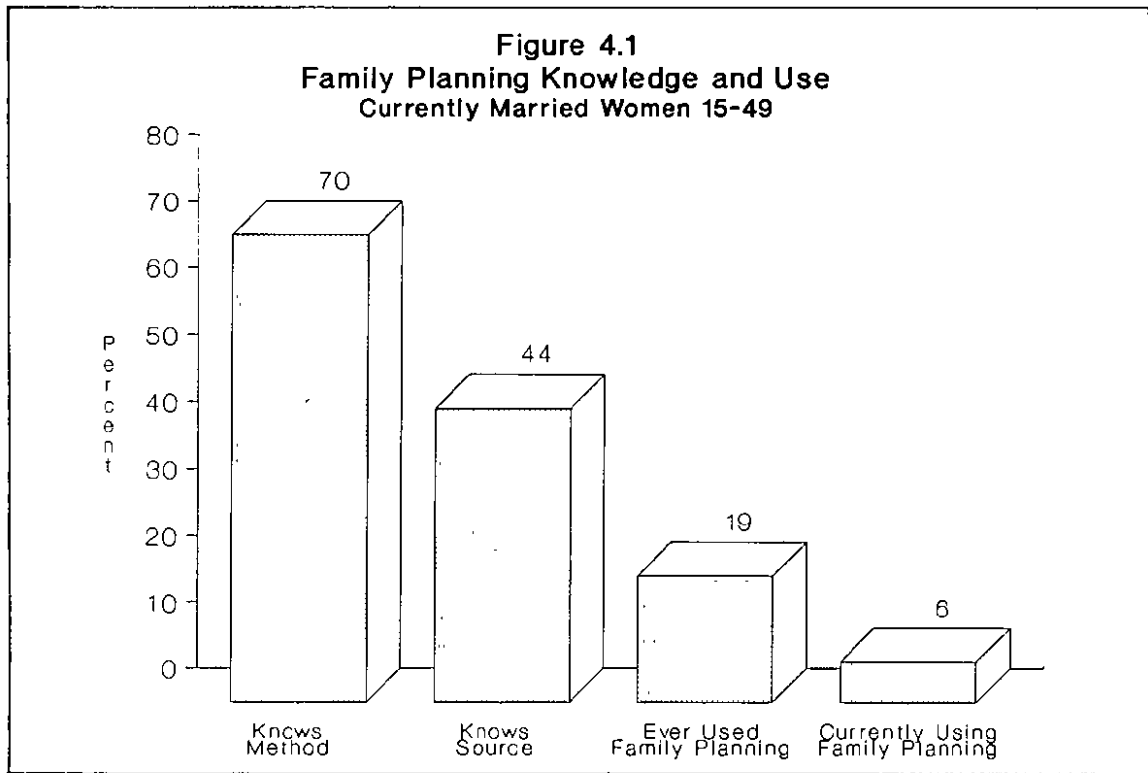
Fertile Period	All Women	Ever Users of Periodic Abstinence
During menstrual period	1.7	1.2
Soon after period ends	18.5	30.6
Between two periods	6.6	21.7
Just before period begins	4.1	5.7
At any time	6.7	3.6
Other	0.2	-
Don't know	62.1	37.1
Total Percent	100.0	100.0
Number	5,239	229

TABLE 4.5 PERCENT DISTRIBUTION OF ALL WOMEN AND CURRENTLY MARRIED WOMEN, ACCORDING TO CONTRACEPTIVE METHODS CURRENTLY USED, LIBERIA, 1986

Method	All Women	Currently Married Women
Using Any Method	8.4	6.4
Using Any Modern Method	7.0	5.5
Pill	4.7	3.3
IUD	0.7	0.6
Injection	0.3	0.3
Vaginal methods	0.1	0.2
Condom	0.2	0.0
Female sterilization	1.0	1.1
Male sterilization	0.0	0.0
Using Any Traditional Method	1.4	0.9
Periodic abstinence	0.9	0.6
Withdrawal	0.2	0.1
Other methods	0.3	0.2
Not Using	91.6	93.6
Total Percent	100.0	100.0
Number	5,239	3,538



of family planning knowledge and use and shows the rapid drop-off in the proportion of women who know about methods, know a source, have ever used, and are currently using family planning.



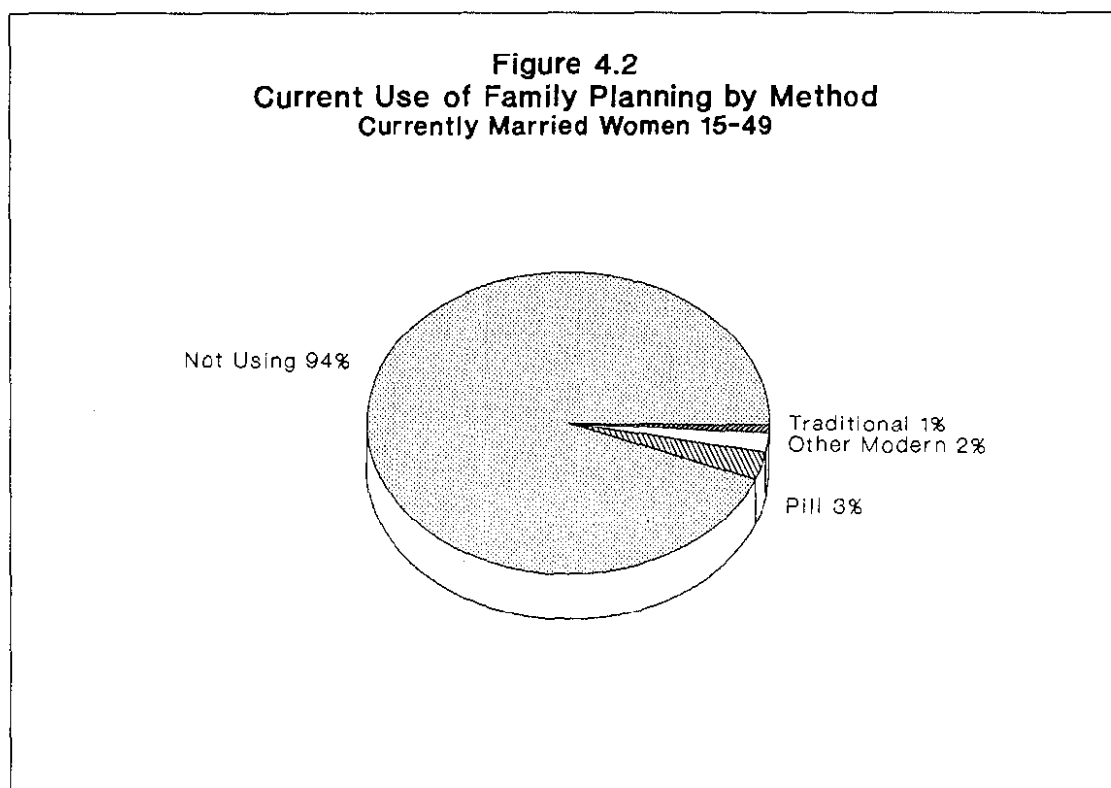
Most users rely on modern methods. The pill is the predominant method; more than half of all current users rely on the pill. Female sterilization, periodic abstinence and the IUD account for the majority of the rest of the users (see Figure 4.2).

Table 4.6 presents the relationship between the level of use of contraceptive methods and background characteristics of currently married women. With regard to age patterns, the percentage of currently married women using a method increases directly with age, from 2 percent in the 15-19 age group to 8 percent in the 25-29 cohort, after which, the use rate declines to 5 percent among women 35-39 before peaking again at 8 percent for the 40-49 cohorts. Family planning use also increases with the number of living children that a woman has, ranging from 3 percent among women with no children to 12 percent among those with 6 or more children.

The percentage using family planning among urban women (12 percent) is almost four times the rate observed for rural women. The urban character of Montserrado County likely explains its relatively high use rate. Reflecting their predominantly rural population, the percentages using family planning in both Sinoe and Grand Gedeh Counties are slightly smaller than that reported for Liberia as a whole.

Very large differentials in contraceptive use are apparent when women are classified by education level. The use rate among women with some secondary schooling is roughly three times the rate among women who attended only the primary grades and nearly ten times the rate among women who never went to school (see Figure 4.3). Christians are more likely to be using than are

women of other religious groups. The Grebo, Kru/Sapo and Lorma have the highest contraceptive use rates among the various tribes in Liberia.



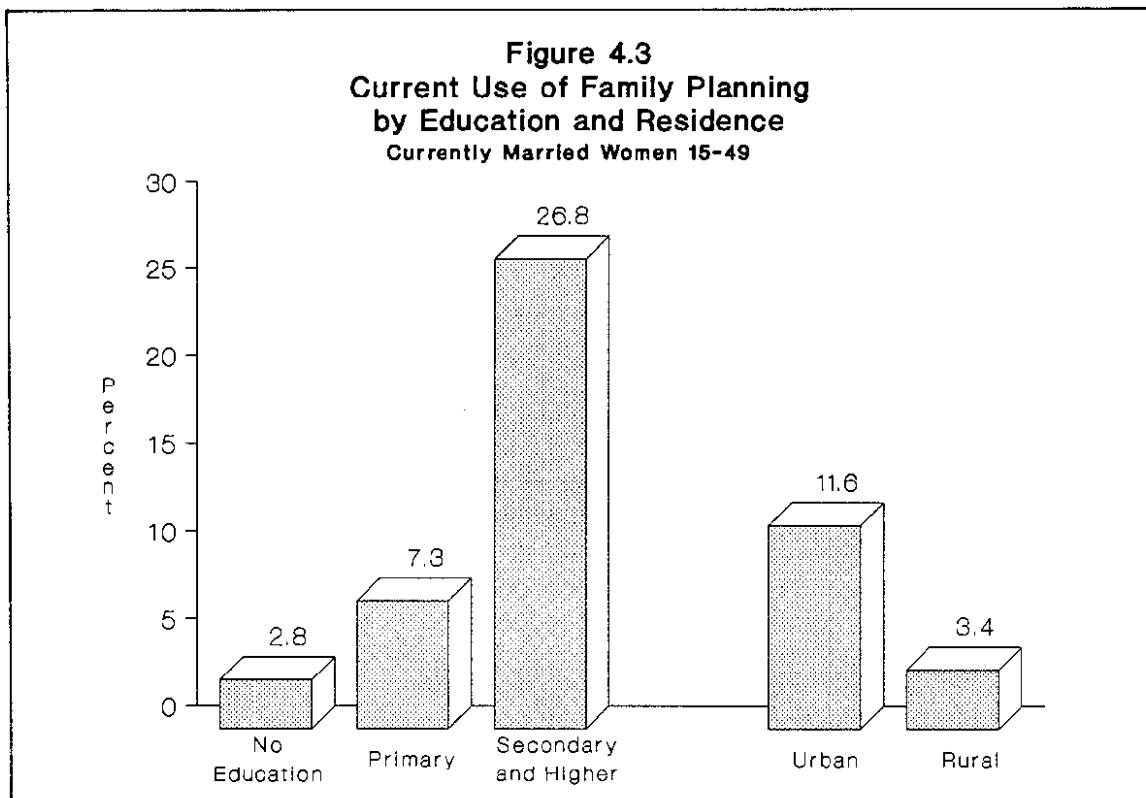
#### 4.4 Source For Methods

Information on the source for contraceptive methods was obtained by asking women using modern methods about where they had obtained their methods the last time and by asking women relying on periodic abstinence where they had received advice about the method. The most frequently mentioned source was the Family Planning Association of Liberia (FPAL) which provided 40 percent of the users with methods or advice (Table 4.7 and Figure 4.4). Government hospitals or clinics provide contraceptive services for 29 percent of users while 23 percent rely on private sector sources, including church hospitals or clinics, private doctors or pharmacies or shops.

The sources relied on by users vary with the method used. Women taking the pill—who comprise the majority of users—are much more likely to name FPAL as their service provider than are users of other methods. Government clinics or hospitals are the primary source for the comparatively small number of women using modern methods other than the pill. Among periodic abstinence users, relatives or friends were the most frequently cited source of advice.

TABLE 4.6 PERCENTAGE CURRENTLY USING ANY CONTRACEPTIVE METHOD AND CURRENTLY USING ANY MODERN CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN BY BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Any Method	Any Modern Method	Characteristic	Any Method	Any Modern Method
<u>Age</u>			<u>Education</u>		
15-19	2.1	2.0	No schooling	2.8	2.5
20-24	5.4	4.9	Primary	7.3	6.6
25-29	7.7	6.7	Secondary or more	26.8	22.1
30-34	8.1	6.3	<u>Religion</u>		
35-39	5.2	5.1	Christian	9.6	8.2
40-44	8.3	5.7	Muslim	3.5	2.8
45-49	8.0	7.1	Traditional/Other	3.7	3.1
<u>Living Children</u>			None	3.5	3.3
None	2.5	2.5	<u>Tribe</u>		
1	3.8	3.6	Bassa	4.0	3.3
2	5.7	4.8	Gio	3.6	3.1
3	6.4	5.8	Gola	2.8	2.8
4	9.7	7.3	Grebo	12.2	11.4
5	6.5	5.5	Kpelle	3.7	3.5
6 or more	12.1	10.6	Krahn	4.0	4.0
<u>Urban-Rural</u>			Kru/Sapo	11.3	10.7
Urban	11.6	9.7	Lorma	12.1	9.8
Rural	3.4	3.1	Mandingo	1.5	1.5
<u>Region</u>			Mano	6.3	5.4
Sierra	4.4	3.9	Other/None	9.6	7.2
Grand Gedeh	3.0	2.9	<u>Total</u>		
Montserrado	12.0	9.7		6.4	5.5
Rest of country	4.9	4.4			



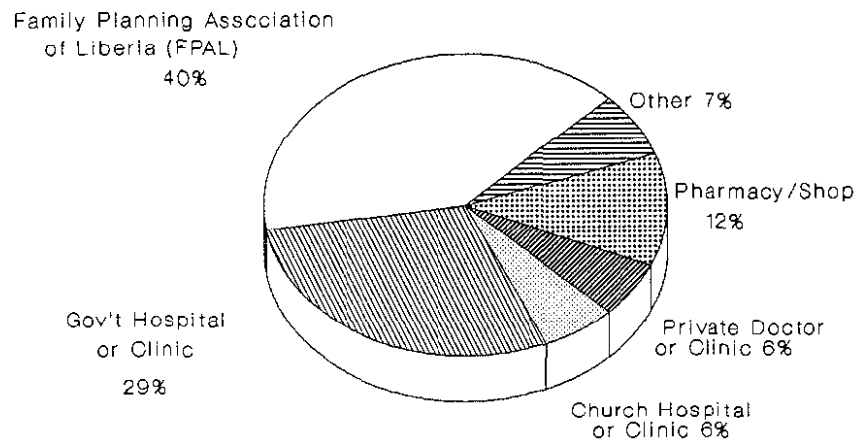
**TABLE 4.7** PERCENT DISTRIBUTION OF CURRENT CONTRACEPTIVE USERS BY THE MOST RECENT SOURCE OF SUPPLY (INFORMATION) ACCORDING TO THE METHOD CURRENTLY USED, LIBERIA, 1986

Source	Pill	Female Sterilization	Other Modern <sup>1</sup>	Periodic Abstinence	All Methods <sup>2</sup>
Government hospital or clinic	20.7	62.3	42.1	12.0	28.7
Family Planning Assoc. of Liberia (FPAL)	53.9	2.6	31.5	25.5	40.4
Church hospital or clinic	2.6	24.0	6.2	-	5.7
Private doctor/clinic	3.7	8.5	8.2	9.4	5.7
Pharmacy/shop	17.9	-	6.0	3.0	11.9
Fieldworker/other	1.2	2.6	4.0	47.0	6.9
Don't know	-	-	2.0	3.0	0.7
Total Percent	100.0	100.0	100.0	100.0	100.0
Number	244	52	69	46	411

<sup>1</sup> Includes IUD, injection, vaginal methods, and condom

<sup>2</sup> Excludes withdrawal and other traditional methods

**Figure 4.4**  
**Source of Family Planning Supply**  
**Current Users**



#### 4.5 Attitude About Pregnancy and Reasons for Non-use

Among respondents in the LDHS, 28 percent could be classified as exposed non-users; women falling into this category were not using contraception and were immediately exposed to the risk of pregnancy, i.e., they were not pregnant, they had had sexual intercourse within four weeks of the interview, and they were presumed to be ovulating and fecund.<sup>1</sup> Table 4.8 presents information on the attitude toward becoming pregnant among women in this group. Overall, only about one in four non-users immediately exposed to the risk of pregnancy reported that she would be upset if she became pregnant within the next few weeks. However, the percentage who said that they would be upset increases with the number of living children, ranging from 21 percent among women with no children to 52 percent among those with 6 or more children.

Table 4.9 examines the reasons for not using family planning given by exposed non-users who said that they would be unhappy if they became pregnant right away. Approximately one out of four of these women cited factors relating to the availability—high cost or difficulty in obtaining methods—as the main reasons for non-use. Another quarter of the women pointed to fear of side effects or a lack of information about methods as the primary reason that they were not contracepting. An additional 13 percent said that either their husbands or they themselves disapproved of the use of contraceptive methods. Thus, almost two-thirds of the exposed non-users gave reasons for non-use which relate to variables which the family planning program in Liberia can address—either through expanded IE&C efforts and/or improved access to services.

<sup>1</sup> For a more complete definition of “exposed to risk,” see Section 2.5

TABLE 4.8 PERCENT DISTRIBUTION OF NON-USERS EXPOSED TO RISK OF PREGNANCY BY ATTITUDE TOWARD BECOMING PREGNANT IN THE NEXT FEW WEEKS, ACCORDING TO THE NUMBER OF LIVING CHILDREN, LIBERIA, 1986

Number of Living Children	Attitude		Total Percent	Wtd. Number
	Upset	Not Upset		
None	21.2	78.7	100.0	506
1	20.8	79.2	100.0	241
2	23.3	76.4	100.0	208
3	29.2	70.4	100.0	149
4	33.2	66.8	100.0	148
5	40.5	59.5	100.0	76
6 or more	51.8	48.1	100.0	136
Total	27.4	72.6	100.0	1,463

Note: Exposed women are those who are not pregnant, not postpartum amenorrheic, fecund, and sexually active. For a more detailed definition, see Section 2.5.

TABLE 4.9 PERCENT DISTRIBUTION OF NON-USERS EXPOSED TO RISK OF PREGNANCY WHO WOULD BE UPSET IF THEY BECAME PREGNANT, BY MAIN REASON FOR NON-USE, ACCORDING TO AGE, LIBERIA, 1986

Reason for Non-use	Under 30 Years	30 Years or More	All Ages
Oppose family planning	6.3	3.2	5.3
Husband objects	6.5	10.1	7.7
Religious concerns	1.7	3.4	2.2
Fears side effects	19.1	13.7	17.4
Methods costly	13.0	11.6	12.6
Methods difficult to get	12.3	6.7	10.5
Lack knowledge	10.8	8.1	9.9
Breastfeeding	6.3	18.3	10.3
Menopausal/subfecund	0.0	2.7	0.9
Infrequent sex	4.2	8.4	5.6
Other	19.7	13.8	17.6
Total Percent	100.0	100.0	100.0
Wtd. Number	266	131	398

## 4.6 Intention To Use In the Future

Women who were not using a contraceptive method at the time of the LDHS interview were asked if they thought that they would do something to keep from getting pregnant at any time in the future. Table 4.10 shows that around one-third of currently married non-users intend to use in the future, 11 percent are undecided about their intentions, and 57 percent do not plan to do anything to avoid a pregnancy in the future. The percentage intending to use increases directly with the number of children (including any current pregnancy) that a woman has, from around 9 percent among women with no children to 49 percent among those with 6 or more children.

TABLE 4.10 PERCENT DISTRIBUTION OF CURRENTLY MARRIED NON-USERS BY INTENTION TO USE IN THE FUTURE, ACCORDING TO NUMBER OF LIVING CHILDREN, LIBERIA, 1986

Intention to Use in Future	Number of Living Children*							Total
	None	1	2	3	4	5	6 or more	
Intends to use	8.9	22.4	30.7	35.4	38.6	46.1	49.2	32.1
Does not intend to use	79.1	64.1	57.7	55.1	51.8	43.2	39.4	56.6
Doesn't know	11.8	13.5	11.6	9.5	9.5	10.7	11.4	11.3
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wtd. Number	382	656	597	498	452	276	449	3311

\* Includes current pregnancy

Table 4.11 presents information on method preferences for currently married non-users who say that they intend to use in the future. The pill is clearly the most popular method among non-users; 37 percent of those intending to use in the future say that they would use the pill. The second most popular method is injection which 22 percent prefer, followed by female sterilization which 7 percent prefer.

The age of the non-user is related to her method preference. Non-users under the age of 30 years are more likely to prefer the pill than older non-users. Among the latter group, injection is preferred almost as often as the pill (27 percent vs. 28 percent) and 10 percent say that they would have a sterilization.

**TABLE 4.11 PERCENT DISTRIBUTION OF CURRENTLY MARRIED NON-USERS INTENDING TO USE IN THE FUTURE BY PREFERRED METHOD, ACCORDING TO CURRENT AGE, LIBERIA, 1986**

Preferred Method	Under 30 Years	30 Years and Older	All Ages
Pill	43.1	28.2	36.7
IUD	3.7	3.0	3.4
Injection	18.0	27.4	22.0
Vaginal methods	1.1	0.7	1.0
Condom	0.5	0.3	0.4
Female sterilization	3.9	10.4	6.7
Rhythm	1.4	0.9	1.2
Withdrawal	0.0	0.4	0.2
Other	7.3	10.5	8.7
Not Sure	20.9	18.2	19.6
Total Percent	100.0	100.0	100.0
Wtd. Number	606	457	1,063

## 4.7 Approval of the Use of Family Planning Methods

To obtain information about attitudes toward family planning, the LDHS respondents were asked whether they approved of couples who used something to avoid a pregnancy. Although all women were asked the question on approval, the analysis presented here is focused on currently married women, and excludes the roughly 30 percent of married women who have never heard of a contraceptive method. Overall, slightly less than half (46 percent) of currently married women knowing about family planning approve of its use by couples. An almost equal proportion (39 percent) disapprove of family planning use and 14 percent say they are not sure.

Currently married women were also asked whether they thought that their husbands approved of the use of family planning methods. Table 4.12 shows the distribution of currently married women who know a method by both their own attitude and their belief about their husbands' attitude toward family planning use. Looking only at the husband's perceived attitude, the results indicate that 29 percent of women feel that their husbands approve of family planning, while 36 percent believe that their husbands disapprove of the use of contraception. According to the wife, only 26 percent of couples in Liberia jointly approve of family planning.

Communication on the subject of family planning is limited among couples in Liberia. Table 4.13 indicates that almost two-thirds of currently married women did not talk about family planning with their husbands in the year preceding the LDHS. Age is a factor with regard to the likelihood of discussing family planning, with the oldest and youngest age groups being the most likely to have not talked about family planning. However, even among women in the peak



TABLE 4.12 PERCENT DISTRIBUTION OF CURRENTLY MARRIED WOMEN KNOWING A CONTRACEPTIVE METHOD BY HUSBAND'S AND WIFE'S ATTITUDE TOWARD THE USE OF FAMILY PLANNING, LIBERIA, 1986

Wife's Attitude	Husband's Attitude			Total
	Approves	Disapproves	Not Sure	
Approves	25.8	8.8	11.7	46.4
Disapproves	1.4	24.1	13.4	39.2
Not sure	1.4	3.1	9.9	14.4
Total	28.7	36.0	35.1	100.0

TABLE 4.13 PERCENT DISTRIBUTION OF CURRENTLY MARRIED WOMEN KNOWING A METHOD BY NUMBER OF TIMES DISCUSSED FAMILY PLANNING WITH HUSBAND, ACCORDING TO CURRENT AGE, LIBERIA, 1986

Age	Never	Once or Twice	More Often	Total Percent	Weighted Number
15-19	76.7	16.8	6.5	100.0	199
20-24	64.4	19.4	16.2	100.0	492
25-29	61.8	21.4	16.8	100.0	624
30-34	61.9	20.3	17.8	100.0	406
35-39	61.7	18.5	19.8	100.0	374
40-44	70.5	10.6	18.8	100.0	173
45-49	72.6	14.5	12.8	100.0	202
All Ages	64.8	18.6	16.3	100.0	2,470

childbearing years, fewer than four in ten have discussed family planning with their husbands recently.

Table 4.14 examines variations in both the percentage of currently married women knowing a method who say that they approve of family planning and the percentage who report that their husbands approve, according to characteristics of the woman. Attitudes toward family planning vary according to the subgroup of the population to which a woman belongs. Approval is higher among women in the middle age groups, women with more living children, women living in urban areas or in Montserrado County, women with more education and Christian women. By tribe, the highest approval level is found among the Grebo and the lowest among the Mandingo. Variations in the pattern of perceived approval by husbands generally follows those of their wives.

TABLE 4.14 PERCENTAGE OF CURRENTLY MARRIED WOMEN KNOWING A METHOD WHO APPROVE OF FAMILY PLANNING AND WHO SAY HUSBAND APPROVES OF FAMILY PLANNING, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Woman Approves	Husband Approves	Characteristic	Woman Approves	Husband Approves
<u>Age</u>			<u>Education</u>		
15-19	37.9	23.2	No schooling	38.0	21.4
20-24	48.0	29.7	Primary	52.1	35.3
25-29	48.2	29.5	Secondary or more	73.5	50.4
30-34	51.4	32.2	<u>Religion</u>		
35-39	47.2	29.6	Christian	52.5	33.8
40-44	43.1	22.0	Muslim	41.4	24.3
45-49	36.9	26.0	Traditional/Other	37.0	21.4
<u>Living Children</u>			None	39.2	22.3
None	22.9	7.8	<u>Tribe</u>		
1	36.6	20.8	Bassa	33.3	18.1
2	46.4	28.2	Gio	36.6	19.0
3	48.8	30.0	Gola	55.7	27.8
4	52.9	32.3	Grebo	64.1	40.1
5	57.4	33.0	Kpelle	51.0	31.6
6 or more	63.6	49.0	Krahn	42.7	28.5
<u>Urban-Rural</u>			Kru/Sapo	55.3	34.0
Urban	53.9	35.9	Lorma	53.9	34.5
Rural	41.1	23.4	Mandingo	24.1	15.6
<u>Region</u>			Mano	31.4	22.4
Sinoe	36.4	21.5	Other/None	53.3	35.5
Grand Gedeh	46.6	28.9	<u>Total</u>		
Montserrado	54.7	35.7		46.4	28.7
Rest of country	43.6	26.2			



## 5. FERTILITY PREFERENCES

### 5.1 Introduction

Since the main objective of most family planning programs is to allow couples to have the number of children they want, when they want them, information on fertility preferences is of considerable importance to program planners in gauging the need for family planning services. Women who either do not want any more children or want to delay having their next child, can be considered as potentially in need of contraception. Similarly, the proportion of births that are either unwanted or mistimed is an important indicator of family planning need. Even vigorous family planning service programs will make little headway until there is some desire to regulate fertility and changes in fertility preferences over time often predict future changes in contraceptive practice.

The LDHS questionnaire included a number of questions about fertility preferences. All currently married women were asked if they wanted to have another child (after the current pregnancy, if the woman was pregnant) and if so, they were asked how long they wanted to wait before having their next child. All women, regardless of marital status, were asked how many children they would like to have altogether, assuming they could go back to the time when they didn't have any children. This latter variable is referred to in this report as the "ideal" number of children. Also, women who had a birth in the five years before the survey were asked if their last birth was either unwanted or mistimed. Responses for each of these sets of questions will be presented in turn.

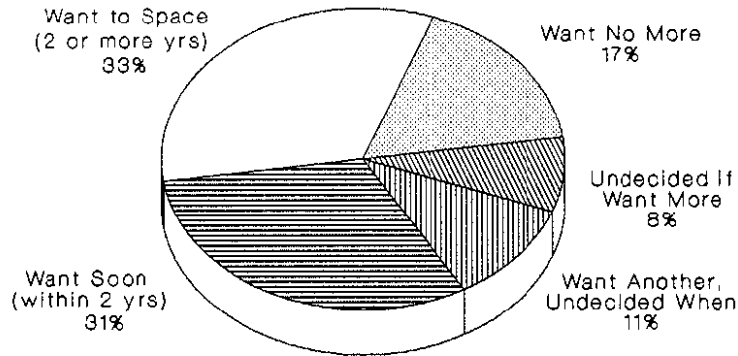
### 5.2 Future Fertility Preferences

Figure 5.1 shows the distribution of currently married women by whether and when they want another child. Overall, 17 percent of married Liberian women do not want any more children and an additional 33 percent want to wait at least two years before they have their next child. Adding these two figures together indicates that one out of every two women is potentially in need of family planning services either to delay or to limit births. Thirty-one percent of women want another child soon (within two years) and 19 percent either want another child, but do not know when, or are undecided as to whether they want another child.

Fertility preferences differ according to the number of living children a woman has (see Table 5.1 and Figure 5.2). The proportion who want no more children rises dramatically from only two percent of childless women to 57 percent of those with six or more children. These results indicate substantial interest in limiting fertility; still, the fact that one-third of women with six or more children want to have another child is evidence of a strongly pronatalist culture. The data in Table 5.1 also indicate the high level of interest in spacing births that exists even among women with no children, but especially among women with 1-3 living children

Table 5.2 presents data on fertility preferences by age of woman. As expected, the proportion wanting no more children rises with age, from only one percent of women 15-19 to almost half of women aged 45-49. The data also show the considerable interest in spacing births in Liberia. The proportion who want to delay their next child generally falls with age, as does the proportion of women who want their next child within two years.

**Figure 5.1**  
**Fertility Preferences**  
**Currently Married Women 15-49**



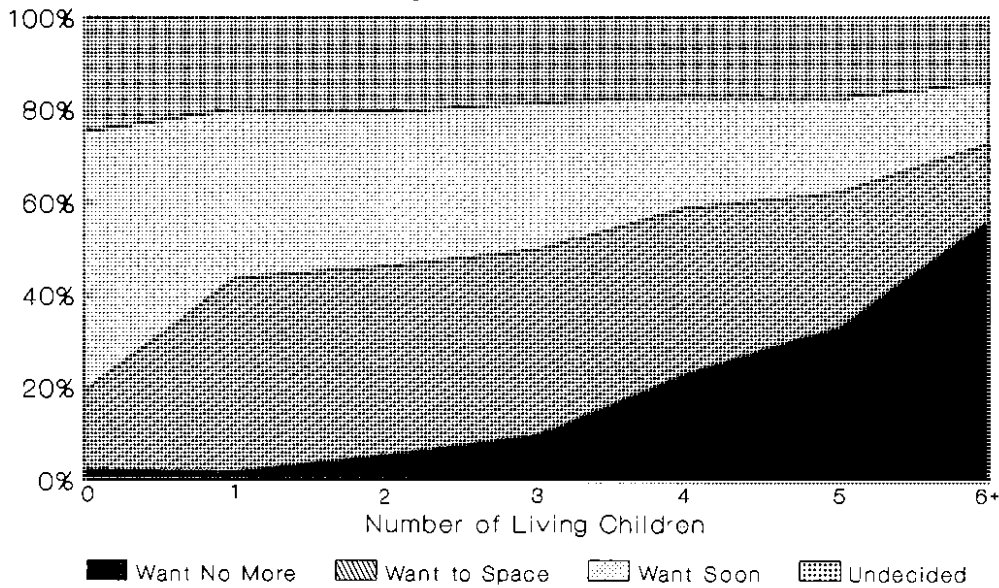
**TABLE 5.1** PERCENT DISTRIBUTION OF CURRENTLY MARRIED WOMEN AGED 15-49 BY FERTILITY PREFERENCES, ACCORDING TO NUMBER OF LIVING CHILDREN, LIBERIA, 1986

Fertility Preference	Number of Living Children <sup>1</sup>							All Currently Married Women
	0	1	2	3	4	5	6+	
Want no more children <sup>2</sup>	2.4	1.9	5.5	9.8	23.0	33.0	56.5	17.2
Want next child in 2 or more yrs	16.6	41.8	40.8	40.0	35.9	29.2	16.3	33.0
Want next child within 2 years	56.2	36.4	33.2	31.8	23.6	20.3	13.3	30.9
Want another, undecided when	20.6	14.2	13.6	9.9	6.8	8.3	5.6	11.4
Undecided if want another	4.2	5.7	6.9	8.6	10.6	9.2	8.3	7.5
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wtd. Number of Women	395	682	633	530	497	294	507	3,538

<sup>1</sup> Includes current pregnancy

<sup>2</sup> Includes women who have been sterilized

**Figure 5.2**  
**Fertility Preferences by Number**  
**of Living Children**  
**Currently Married Women 15-49**



**TABLE 5.2**      **PERCENT DISTRIBUTION OF CURRENTLY MARRIED WOMEN AGED 15-49 BY**  
**FERTILITY PREFERENCES, ACCORDING TO AGE GROUP, LIBERIA, 1986**

Fertility Preference	Age Group							All Currently Married Women
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Want no more children*	1.0	6.9	9.1	19.5	25.2	35.0	47.6	17.2
Want next child in 2 or more yrs	38.2	44.3	40.2	32.7	24.4	16.5	11.6	33.0
Want next child within 2 years	38.2	33.6	32.2	29.1	27.1	30.5	23.2	30.9
Want another, undecided when	13.0	10.0	11.6	9.6	13.2	10.4	12.6	11.4
Undecided if want another	9.6	5.2	6.8	9.2	10.1	7.5	4.9	7.5
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wtd. Number of Women	360	675	857	539	535	261	311	3,538

\* Includes women who have been sterilized

In terms of fertility preference measures, the proportion of women who want no more children is perhaps the single most important figure. For this reason, it has been chosen as an indicator for studying differentials in fertility preferences by background characteristics of women, shown in Table 5.3. Since fertility preferences are so highly correlated with number of living children, and since number of living children probably is related to the background characteristics, the data in Table 5.3 are tabulated by number of children as well.

Urban women are somewhat more likely than rural women to want to stop childbearing, especially those women who have more than three children. Looking at the data by region of residence, the proportion of women who want to have no more children is generally higher in Montserrado County and lower in Sinoe County than in the other areas. With regard to education, women with some secondary schooling are more likely than their less educated counterparts to want no more children. Regardless of the number of children they have, Christian women are more likely to want to stop childbearing than Muslim women. There is no clear pattern with regard to women with no religion or with traditional religious beliefs. Perhaps due in part to their predominantly Muslim culture, the Mandingo show the smallest proportion of women who want no more children. Krahn and Bassa women also have small proportions wanting to stop childbearing, while the proportions are highest among the Kru/Sapo, Kpelle, and Lorma.

The proportion of women who want to stop childbearing or who want to space their next birth is a crude measure of the extent of need for family planning, since not all these women are exposed to the risk of pregnancy and some of them may already be using contraception. Table 5.4 presents more refined measures of need for family planning, namely, the percent of currently married women who are fecund, not contracepting and who either want no more children or want to postpone their next child. The data, along with the proportion of women in need who intend to use, are presented according to background characteristics of the woman.

Overall, about 40 percent of currently married Liberian women are in need of family planning. That is, they are fecund and not using contraception, despite the fact that they do not want another child in the near future. Of these 40 percent, almost three-quarters are in need because they want to space their next births, while one-quarter are in need because they do not want to have any more children. Furthermore, 22 percent of married women (half of the women in need) say that they intend to use contraception. In other words, not only is there a substantial need for family planning services in Liberia—mostly for temporary methods—but also, many women intend to use them.

The proportions in need, and the proportions in need who intend to use, are remarkably similar across background characteristics of women. Both need for and intention to use contraception are slightly higher among urban women and women with primary or secondary education. Also, although Muslim and Mandingo women have a higher than average proportion in need of family planning, they have a smaller than average proportion reporting an intention to use in the future. To summarize, the data in Table 5.4 do not indicate that there are particular groups of women with greater need for family planning, but rather that need is more or less uniformly spread in the country.

TABLE 5.3 PERCENTAGE OF CURRENTLY MARRIED WOMEN AGED 15-49 WHO WANT NO MORE CHILDREN, ACCORDING TO NUMBER OF LIVING CHILDREN AND BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Number of Living Children**							All Currently Married Women
	0	1	2	3	4	5	6+	
<u>Urban-Rural</u>								
Urban	2.8	1.6	4.2	11.0	25.0	39.3	64.1	19.4
Rural	2.2	2.1	6.2	9.0	21.5	29.1	52.0	15.8
<u>Region</u>								
Sinoe	0.0	1.3	3.3	4.3	8.9	18.5	44.4	12.5
Grand Gedeh	0.0	0.9	6.5	10.8	9.0	19.7	43.4	14.9
Montserrado	1.4	0.0	5.1	13.3	25.0	43.1	60.7	18.9
Rest of country	3.1	2.6	5.7	8.9	24.2	31.7	57.6	17.0
<u>Education</u>								
No education	3.2	1.8	5.1	7.2	20.6	31.8	53.1	16.6
Primary	0.0	2.4	4.8	12.1	22.8	26.8	65.0	14.8
Secondary or more	0.0	1.6	8.1	18.6	35.4	51.9	74.0	22.8
<u>Religion</u>								
Christian	3.1	2.6	5.4	13.8	25.8	35.5	58.9	20.5
Muslim	1.7	2.0	2.1	5.0	13.1	24.5	45.0	10.6
Trad'l/Other	0.0	2.5	7.3	5.9	26.1	43.9	61.3	18.5
None	3.0	0.0	8.0	6.4	21.4	29.1	54.9	14.3
<u>Tribe</u>								
Bassa	5.0	1.3	6.8	7.0	21.7	22.1	55.9	13.9
Gio	0.0	3.7	10.0	0.0	24.3	*	75.1	18.3
Gola	*	*	3.8	17.4	*	*	*	15.6
Grebo	*	0.9	6.3	9.3	19.7	7.6	52.6	17.3
Kpelle	2.4	2.6	4.1	10.8	25.4	35.4	61.8	20.6
Krahn	0.0	0.0	6.2	4.8	5.8	36.2	37.7	12.0
Kru/Sapo	0.0	3.4	9.5	11.0	15.8	36.9	56.3	21.8
Lorma	*	4.2	0.0	*	12.5	*	*	20.4
Mandingo	3.9	0.0	2.4	6.1	4.6	*	*	6.7
Mano	*	3.8	8.9	12.5	28.2	*	40.9	15.7
Other/None	0.0	1.0	4.0	16.2	38.2	36.7	59.3	19.1
Total	2.4	1.9	5.5	9.8	23.0	33.0	56.5	17.2

Note: Women who have been sterilized are included among women who want no more children.

\* Fewer than 20 unweighted cases

\*\* Includes current pregnancy



TABLE 5.4 AMONG CURRENTLY MARRIED WOMEN, THE PERCENTAGE WHO ARE IN NEED OF FAMILY PLANNING AND THE PERCENTAGE WHO ARE IN NEED AND INTEND TO USE FAMILY PLANNING IN THE FUTURE, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	In Need			In Need and Intend to Use Contraception		
	Want No More	Want to Postpone	Total	Want No More	Want to Postpone	Total
<u>Urban-Rural</u>						
Urban	11.3	32.3	43.6	8.8	13.3	22.1
Rural	10.0	25.6	35.6	7.7	8.9	16.6
<u>Region</u>						
Sinoe	9.3	24.7	34.0	7.7	10.9	18.6
Grand Gedeh	9.9	31.5	41.3	8.4	11.7	20.2
Montserrado	11.0	31.8	42.8	8.2	12.4	20.6
Rest of country	10.4	26.7	37.0	8.1	9.8	17.8
<u>Education</u>						
No education	10.3	26.2	36.5	7.8	7.2	14.9
Primary	9.4	35.7	45.1	8.1	18.3	26.4
Secondary or more	12.4	31.7	44.1	10.2	22.5	32.7
<u>Religion</u>						
Christian	11.4	24.9	36.2	8.8	12.4	21.1
Muslim	7.1	34.5	41.6	5.6	8.3	13.9
Trad'l/Other	13.9	29.6	43.5	10.3	10.1	20.3
None	9.0	29.0	38.0	7.4	8.6	16.0
<u>Tribe</u>						
Bassa	9.2	25.3	34.5	6.2	7.3	13.5
Gio	11.2	28.9	40.1	8.9	10.3	19.2
Goia	11.0	22.0	33.0	9.2	7.3	16.5
Grebo	9.9	26.7	36.5	8.8	16.2	25.0
Kpelle	13.5	26.2	39.7	10.9	8.9	19.8
Krahn	7.5	29.6	37.0	7.0	13.5	20.6
Kru/Sapo	12.2	24.1	36.3	9.7	12.6	22.3
Lorma	10.6	27.5	38.0	9.8	10.8	20.6
Mandingo	5.2	42.8	48.0	3.2	10.2	13.3
Mano	7.2	27.0	34.2	5.4	15.3	20.7
Other/None	11.8	29.4	41.2	8.1	9.2	17.3
Total	10.5	28.1	38.6	8.1	10.5	18.6

Note: Women in need of family planning are those who are fecund, not contracepting and who either want no more children or want to postpone their next birth for two or more years.

### 5.3 Ideal Number of Children

In order to assess fertility preferences in Liberia, all LDHS respondents, regardless of marital status, were asked: “(If you could go back to the time when you didn’t have any children, and) if you could choose the number of children to have in your whole life, how many would that be?” Women with children were asked the entire question, while those with no children were asked the part excluding the phrase in parenthesis. The question measures two things—first, among women who have just started childbearing, the data give an idea of the total number of children these women hope to have in future; secondly, among older, higher parity women, the data can provide some idea of the level of unwanted fertility.

It is important to note that some women have difficulty in answering such a hypothetical question, presumably more so in cultures in which control over fertility is still a new concept. The fact that one out of every four women in Liberia gave a non-numeric answer (“As many as God gives me,” “Don’t know,” etc.) is evidence of this. There is also an indication that in Liberia, some women may have interpreted the question to mean “before you had any children, how many did you want to have?”, which turns it from a hypothetical into a factual question. Finally, it is usually assumed with this question that some women report their actual number of children as their ideal number, since they find it difficult to admit that they would not want some of their children if they could choose again.

The distribution of women by ideal number of children and actual number of children (Table 5.5) shows that more than one out of every three women states an ideal of six or more children and fewer than one out of twenty women would prefer two or fewer children. Women who already have several children state higher ideal family sizes than women with fewer children—in fact, the mean ideal number of children rises steadily from 5.3 for women with no living children to 7.4 among women with six or more living children. This may be due either to the fact that women who want more children actually end up having them, or to the phenomenon mentioned above, that women rationalize the number of children they already have. Despite the generally pronatalist attitude of Liberian women, there is some evidence of *unwanted* fertility in the fact that over 20 percent of women with six or more living children report lower ideal numbers of children.

Table 5.6 indicates that there is considerable variation in mean ideal numbers of children by age and background characteristics of women. The data point out the fact that younger women have considerably smaller ideal family sizes than older women, which implies that, if young women can succeed in having only those children they want, fertility rates may fall in the future. Regarding other differentials, rural women report higher ideal numbers of children than urban women at all age groups. Overall, the difference is large, amounting to almost one and a half children (5.2 for urban vs. 6.6 for rural women).

Differences by region are even more pronounced, with women in Grand Gedeh County reporting a mean ideal of 7.8 children, compared to 7.4 for women in Sinoe County, 5.1 for women in Montserrado County, and 6.2 for women in the rest of the country. The pattern within age groups is almost uniformly the same as the overall pattern. Women with no education also have a high ideal number of children (6.8), compared to women with primary education (5.3), and women with secondary education or more (4.5). At each age group, Christian women have lower mean

ideal numbers of children than women of other faiths. Differences by tribal affiliation are generally minimal, with women in most tribes favoring about six children. Lorma women report the smallest ideal number of children (5.1), while Krahn and Mandingo women report the highest, at 6.9 each.

TABLE 5.5 PERCENT DISTRIBUTION OF WOMEN AGED 15-49 BY IDEAL NUMBER OF CHILDREN, ACCORDING TO ACTUAL NUMBER OF LIVING CHILDREN, LIBERIA, 1986

Ideal Number of Children	Actual Number of Living Children*							All Women
	0	1	2	3	4	5	6+	
0	0.1	0.0	0.2	0.4	0.0	0.0	0.0	0.1
1	1.0	0.6	0.3	0.2	0.0	0.9	0.3	0.5
2	6.1	5.3	4.0	2.1	1.2	2.1	2.1	3.8
3	10.1	9.4	5.8	6.8	2.0	2.7	3.6	6.7
4	21.0	18.8	20.5	13.8	15.7	10.6	11.0	17.1
5	12.2	14.9	11.5	16.8	9.3	12.6	4.2	12.0
6+	27.8	28.4	35.3	37.2	41.9	45.7	46.3	35.2
Non-numeric responses	21.7	22.6	22.4	22.8	29.8	25.5	32.5	24.5
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wtd. No. of women	1,096	1,121	838	664	590	342	588	5,239
Mean, All Women	5.3	5.5	5.8	6.0	6.6	7.0	7.4	6.0
Mean, Currently Married Women	6.1	6.1	6.1	6.2	6.7	7.2	7.6	6.5

\* Includes current pregnancy

## 5.4 Unwanted Fertility

Although the comparison of ideal and actual family size in Table 5.5 provides some insight into the extent of unwanted fertility, a more direct way to measure it is to ask women if their last child was wanted. The LDHS included two questions for women who had a birth in the five years before the survey: "Before you got pregnant with (NAME OF LAST BIRTH), did you want to have more children?" and (if the answer was either "yes" or "don't know"), "Were you glad that you were pregnant then, or did you prefer to wait?" The objective of the first question was to identify births that were unwanted, whereas the second question was designed to investigate mistiming of births. The results from these questions are given in Table 5.7 for women whose last birth occurred in the 12 months before interview.

TABLE 5.6 MEAN IDEAL NUMBER OF CHILDREN FOR WOMEN AGED 15-49 ACCORDING TO AGE AND BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Characteristic	Age							All Women
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
<u>Urban-Rural</u>								
Urban	4.5	4.9	5.2	5.6	6.4	6.2	6.8	5.2
Rural	5.9	6.2	6.4	6.7	7.3	7.8	7.7	6.6
<u>Region</u>								
Sinoe	6.4	6.9	7.3	7.8	8.2	8.8	9.9	7.4
Grand Gedeh	5.6	6.9	7.3	8.2	9.4	9.9	10.0	7.8
Montserrado	4.4	4.8	5.1	5.4	6.1	6.2	6.5	5.1
Rest of country	5.5	5.8	6.1	6.3	6.9	7.3	7.3	6.2
<u>Education</u>								
No education	6.6	6.4	6.3	6.6	7.3	7.6	7.7	6.8
Primary	4.8	5.5	5.6	6.3	6.1	5.9	7.2	5.3
Secondary or more	4.2	4.4	4.8	4.4	4.6	*	*	4.5
<u>Religion</u>								
Christian	4.8	5.2	5.5	6.0	6.7	7.2	7.3	5.7
Muslim	5.8	6.2	6.1	6.5	7.7	8.8	8.2	6.5
Trad'l/Other	6.0	5.7	6.3	6.4	6.9	6.3	7.2	6.3
None	6.0	6.0	6.5	6.3	7.2	7.7	7.9	6.6
<u>Tribe</u>								
Bassa	5.4	5.6	6.2	6.7	7.5	6.2	6.5	6.1
Gio	5.8	6.3	6.4	6.0	8.0	*	7.2	6.5
Gola	5.1	5.9	5.8	*	6.6	*	*	6.0
Grebo	4.8	5.1	6.4	7.1	7.5	7.3	8.9	6.0
Kpelle	5.2	5.4	5.8	6.2	6.3	7.5	7.7	6.0
Krahn	5.5	7.2	6.4	6.8	8.1	10.3	9.4	6.9
Kru/Sapo	5.2	5.5	5.3	6.5	6.8	8.1	8.3	6.0
Lorma	4.5	4.6	5.0	5.1	6.3	*	*	5.1
Mandingo	6.0	6.3	6.0	7.6	8.9	*	*	6.9
Mano	5.7	6.0	6.3	6.9	6.3	6.9	7.7	6.3
Other/None	4.9	5.0	5.7	5.0	6.1	6.6	5.7	5.4
Total	5.2	5.5	5.9	6.2	6.9	7.4	7.5	6.0

\* Fewer than 20 unweighted cases

TABLE 5.7 PERCENT DISTRIBUTION OF WOMEN AGED 15-49 WHO HAD A BIRTH IN THE 12 MONTHS PRIOR TO THE SURVEY BY WHETHER THEY WANTED THE CHILD THEN, LATER, OR NOT AT ALL, ACCORDING TO BIRTH ORDER, LIBERIA, 1986

Preference	Birth Order		Total
	1 - 2	3 or More	
Wanted child then	72.9	66.1	68.7
Wanted child later	5.9	5.4	5.6
Did not want child	21.2	28.4	25.6
Total Percent	100.0	100.0	100.0
Wtd. No. of Births	509	808	1317

The data indicate that one-quarter of women did not want their last birth, and an additional six percent say that their last birth was mistimed. Although it is possible that these rather high figures are accurate, there is some evidence from field observation that women may have misinterpreted the first question as asking whether they wanted to get pregnant at that *time*, as opposed to whether they wanted to have any more children ever, thus confusing the two categories. Even if some of the births reported as unwanted were actually mistimed instead, the fact that over 30 percent of the births in the 12-month period were either unwanted or mistimed is alarming.

## 6. MORTALITY AND HEALTH

### 6.1 Mortality

In the Liberia Demographic and Health Survey, data on mortality were collected primarily for the purpose of estimating infant and childhood mortality rates. This focus is a result of the fact that data appropriate for adult mortality estimation require very large samples and are difficult to collect by the retrospective household survey approach. In this section mortality rates are presented for three age intervals:

Infant mortality – the probability of dying between birth and exact age one;

Childhood mortality – the probability of dying between age one and age five;

Under five mortality – the probability of dying between birth and exact age five.

Mortality rates are calculated on a period basis (i.e., utilizing information on deaths and exposure to mortality by age during a specific time period) rather than on a birth cohort basis. The period approach is preferred for two reasons: first, period-specific rates are more appropriate for program evaluation and second, the data necessary for the calculation of cohort-based childhood mortality rates are only partially available for the five-year period immediately preceding the survey. A complete description of the methodology for computing period-specific mortality probabilities is given elsewhere (Rutstein, 1984).

#### Birth History Survivorship Data

The data for the estimation of mortality rates were collected in the reproduction section of the Individual Woman's Questionnaire. The section began with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live in the household, who live elsewhere and who have died). These questions were followed by a retrospective birth history in which data were obtained on the sex, date of birth, survivorship status and current age or age at death of each of a respondent's live births. The data obtained from these questions are used to calculate infant and childhood mortality rates.

A retrospective birth history, in which data are collected from respondents aged 15–49 as of the survey date, is susceptible to truncation bias and other kinds of data collection errors. Truncation bias refers to the fact that for any time period prior to the year of the survey, data are not available for women at the oldest ages of childbearing (e.g., for the period 10 to 15 years prior to the survey, there is no information about births to women aged 40 to 49). Other data collection errors involve underreporting of events, misreporting of age at death and misreporting of date of birth. In general, all of these data problems are less serious for time periods close to the survey date.

#### Mortality Levels and Trends, 1971–1986

Table 6.1 displays infant and childhood mortality rates for the five-year period preceding the survey (1981–86) and for two earlier five-year time periods (1971–75 and 1976–80). Rates are presented by sex and by urban-rural residence as well as for all Liberia.

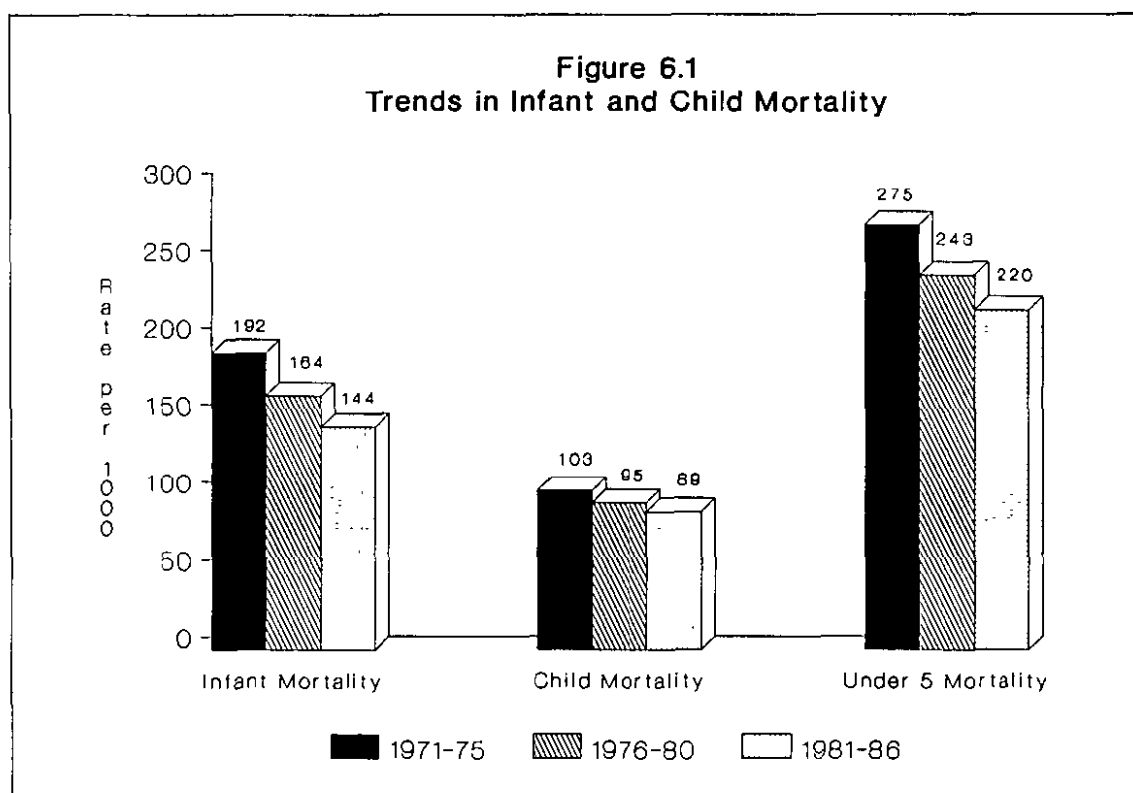
TABLE 6.1 INFANT AND CHILDHOOD MORTALITY ESTIMATES BY TIME PERIOD, SEX AND URBAN-RURAL RESIDENCE, LIBERIA, 1986

	Time Period			Percent Decline 1971-75 to 1981-86
	1971-75	1976-80	1981-86*	
<u>Males</u>				
Infant mortality	216	180	160	26
Child mortality	104	90	88	15
Under five mortality	298	254	234	21
<u>Females</u>				
Infant mortality	167	147	128	23
Child mortality	101	99	90	11
Under five mortality	251	232	206	18
<u>Urban</u>				
Infant mortality	170	153	130	24
Child mortality	86	90	89	-3
Under five mortality	242	229	207	14
<u>Rural</u>				
Infant mortality	207	171	154	26
Child mortality	114	98	89	22
Under five mortality	298	253	230	23
<u>Total</u>				
Infant mortality	192	164	144	25
Child mortality	103	95	89	14
Under five mortality	275	243	220	20

\* Includes exposure during 1986 up to the calendar month preceding the survey

The infant mortality rate for all Liberia for the period 1981–86 is 144 per 1,000 live births and the childhood mortality rate is 89 per 1,000. The overall probability of dying between birth and exact age five is 220 per 1,000 (i.e., more than one in every five births dies before reaching five years of age). While these rates indicate high levels of mortality, the rates for earlier time periods are even higher so that, over the ten-year interval between 1971–75 and 1981–86, there is a clear trend of declining mortality (see Figure 6.1). During that interval infant mortality declined by 25 percent, childhood mortality by 14 percent, and the overall probability of dying between birth and age five by 20 percent.

The extent to which this mortality decline is distributed by sex and urban-rural residence is also indicated in Table 6.2. The trend in infant mortality appears to be broad based, with the percentage decline, between 1971–75 and 1981–86, being about the same for males (26 percent) and females (23 percent) and in urban (24 percent) and rural (26 percent) areas. The decline in childhood mortality is also shared by males (15 percent) and females (11 percent), but is confined to rural areas (22 percent) and not apparent in urban areas (-3 percent).



### Mortality Differentials, 1976–86

In order to have a sufficient number of births to calculate reliable rates for the study of mortality differentials across population subgroups, period-specific rates are presented for the ten-year period 1976–86. Mortality differentials by geographic area, mother's level of education and urban-rural residence are presented in Table 6.2.



TABLE 6.2 SOCIOECONOMIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY, 1976-1986, LIBERIA, 1986

	Infant Mortality (100)	Child Mortality (401)	Under Five Mortality (500)
<u>Urban-Rural</u>			
Urban	140	89	216
Rural	161	93	239
<u>Region</u>			
Sinoe	(178)	(101)	(261)
Grand Gedeh	161	(124)	(266)
Montserrado	150	101	237
Rest of country	152	83	222
<u>Mother's Education</u>			
No education	164	93	242
Primary	(202)	(110)	(289)
Secondary or more	(150)	(87)	(224)
Total	153	91	230

Note: The rates presented include exposure during 1986 up to the calendar month preceding the survey. Figures in parenthesis are based on fewer than 500 cases.

Regional-specific rates were produced for Sinoe, Grand Gedeh, and Montserrado Counties, and the rest of the country. Rates of infant mortality for Montserrado and the rest of the country are about the same as for all Liberia while the rates for Sinoe and Grand Gedeh are higher. Estimates of infant mortality by mother's education indicate an erratic pattern which may be the result of the relatively small number of births to women in the higher education categories. The urban-rural rates display the most definitive differentials. In terms of infant mortality, the rural rate (161 per 1,000) exceeds the urban rate (140) by 15 percent.

Mortality differentials by sex, mother's age at birth, birth order, and length of the previous birth interval are shown in Table 6.3. Infant mortality estimates by sex differ by about 20 percent, with lower rates for females. Mortality rates by mother's age at birth display the expected differentials: infant mortality is highest for births to women under age 20 (177), declines for women aged 20-24 and 25-29 (155 and 136, respectively) and increases somewhat for women aged 30 and above (142) (see Figure 6.2). Similarly, infant mortality estimates by birth order display the expected differentials.

TABLE 6.3 DEMOGRAPHIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY, 1976-1986, LIBERIA, 1986

	Infant Mortality (1Q0)	Child Mortality (4Q1)	Under Five Mortality (5Q0)
<u>Sex of Child</u>			
Male	168	89	242
Female	136	93	217
<u>Mother's Age at Birth</u>			
Less than 20	177	110	267
20-24	155	97	237
25-29	136	78	203
30+	142	78	209
<u>Birth Order</u>			
1	157	97	239
2-3	147	93	227
4-6	146	85	219
7 or more	172	88	245
<u>Previous Birth Interval*</u>			
Less than 2 years	203	92	277
2-3 years	124	95	207
4 years or more	72	58	126
Total	153	91	230

Note: The rates presented include exposure during 1986 up to the calendar month preceding the survey.

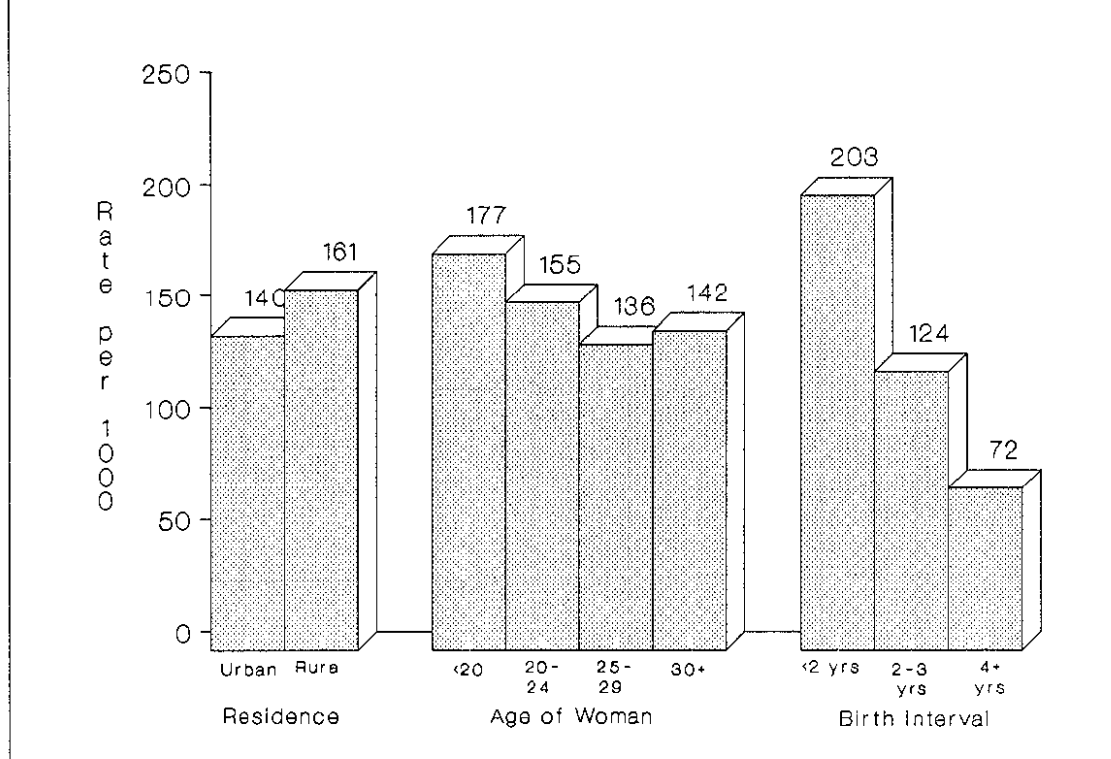
\* Based on births of order two and higher

The most significant differentials are those associated with the length of the preceding birth interval. The infant mortality rate estimates are 203 per 1,000 for birth intervals of less than two years, 124 for intervals of 2 to 4 years, and only 72 for intervals of 4 years or more. Overall, the rate for intervals under two years is almost three times the rate for 4 years or more. There are also substantial differentials in childhood mortality by length of the preceding birth interval—essentially in the same direction as the infant mortality differentials. These differentials suggest that a change in birth spacing practices would, by itself, have a favorable impact on mortality levels.

### Data Quality

The reliability of the LDHS mortality data has been investigated by the application of a series of internal consistency checks. Although some heaping was found in the reported age at death data at 12 months of age, the evaluation revealed no major data defects. These findings cannot be considered as establishing the quality of the data set, however, because the power of internal consistency checks for detecting errors is quite limited.

**Figure 6.2**  
**Differentials in Infant Mortality**



Two tests of the data are presented, both of which focus on the plausibility of the age pattern of reported deaths. In the LDHS, age at death was recorded in one of three units: in days for deaths under one month, in months for deaths under two years, or in years for deaths at age two and above. These data permit testing for gross underreporting of events which is thought to result sometimes from a failure of respondents to report births of children who die in very early infancy. A test for such underreporting consists of forming the ratio of deaths under seven days to those under 30 days of age. While the true value of this ratio is unknown, it is known that mortality rates decline with age throughout infancy and that this ratio should exceed 0.25. Values for this ratio in Liberia are as follows:

	<u>1976-80</u>	<u>1981-86</u>
<b>Males</b>	0.64	0.63
<b>Females</b>	0.66	0.73

The ratios conform to expectations for both males and females. The fact that they are consistently higher for females than for males suggests that the sex differentials in infant mortality reported above are not due to differential completeness by sex in the reporting of infant deaths.

The data on age at death were also tested for digit preference (heaping) at 12 months of age. To the extent that such heaping is the result of misreporting the age of deaths occurring in the late post-neonatal period, infant mortality will be biased negatively and child mortality will be biased positively. The distribution of deaths by age in months is as follows:

Age in months	1976-80		1981-86	
	Males	Females	Males	Females
8	25	10	20	13
9	17	12	20	11
10	6	1	1	6
11	10	3	6	0
12	27	30	39	39
13	3	4	7	8
14	4	1	2	4
15	5	2	3	1
16	1	2	0	3

The data indicate substantial heaping at 12 months of age and a deficiency of events in the immediately preceding and succeeding months. The problem can be corrected by reassigning half of the deaths at 12 months to infancy, which would result in an increase in infant mortality of about 5 percent, and a decrease in child mortality of about 8 or 9 percent.

### Comparative Estimates

Mortality estimates are available for Liberia from the 1971 Liberian Population Growth Survey (LPGS), the 1974 and 1984 Censuses, and the 1984 Mortality and Health Utilization Survey (MUHS). The 1971 LPGS employed two systems of data collection and the dual record estimation technique to estimate infant and childhood mortality (Republic of Liberia, 1972). The LDHS rates for the period 1971-75 (192 and 103 for infant and child mortality, respectively) exceed by a considerable margin the LPGS rates for 1971 (159 and 82 for infant and child mortality, respectively). All that can be concluded from the comparison is that the estimates from the LPGS do not impugn the quality of the LDHS data.

Indirect estimation techniques were used to estimate infant mortality rates of 141 for 1974 and 127 for 1984 (see Section 1.6). These rates are substantially lower than the comparable LDHS rates of 192 for 1971-75 and 144 for 1981-86. No explanation for the differences is readily available.

The 1984 MUHS employed a truncated pregnancy history to collect data for the period 1977-84 in three of the thirteen counties of Liberia (GrandCape Mount, Bomi, and Lofa). These three counties are predominantly rural. Thus, despite coverage differences, it seems appropriate to compare the 1984 survey with the rural strata of the LDHS. The 1984 survey estimated infant mortality at 189 per 1,000 births, while a comparable estimate from the LDHS is 163 (the mean of the rural rates for 1976-80 and 1981-86). Taking into consideration coverage differences and sampling variance, the estimates are not inconsistent. However, the 1984 survey was followed by a reinterview check survey which concluded that infant mortality was underestimated by about 20 percent (Becker et. al., 1987). The implied infant mortality rate of 225 per 1,000 is less consistent with the rural LDHS rate.

### Proportion Dead Among Children Ever Born

Additional evidence of the high level of childhood mortality in Liberia is the proportion of children ever born who have died, tabulated by age of woman (Table 6.4). One-quarter of all children born to women 15-49 have died. With the exception of age group 30-34, the proportion dead rises with age of woman, as expected.

TABLE 6.4 MEAN NUMBER OF CHILDREN EVER BORN, SURVIVING AND DEAD AND PROPORTION OF CHILDREN DEAD BY AGE OF WOMEN, LIBERIA, 1986

Age of Woman	Mean Number of Children:			Proportion Dead
	Ever Born	Surviving	Dead	
15-19	0.5	0.4	0.1	.184
20-24	1.8	1.4	0.4	.213
25-29	3.2	2.4	0.7	.236
30-34	4.2	3.2	0.9	.226
35-39	5.3	3.9	1.4	.259
40-44	5.9	4.3	1.6	.264
45-49	6.8	4.7	2.1	.308
All Ages	3.1	2.3	0.8	.249

## 6.2 Maternity Care

The health care that a mother receives during pregnancy and at the time of delivery is important to the survival and well-being of the child as well as the mother. To obtain information on the type of maternity care that Liberian women receive, LDHS respondents who had given birth in the five years preceding the interview were asked if they had seen anyone for a prenatal check before their last birth and if anyone had assisted with the delivery of that child. If they had had a prenatal checkup or received assistance at delivery, they were asked who had provided the care. In cases where the maternity care was received from more than one provider, the most qualified

provider was recorded by the interviewer. With regard to the service provider, it is important to note that Liberia has a well-established program of training for traditional midwives.

Since neonatal tetanus has been shown to be a major cause of infant deaths in developing countries like Liberia, mothers also were asked if they had received an injection before the last birth to keep the baby from getting tetanus (“jerkling”). The responses to this question are, of course, affected by the mother’s recall of events during the pregnancy and, particularly, by her ability to distinguish the tetanus toxoid vaccination from other injections she may have received. Moreover, the failure of a respondent to be immunized against tetanus during the pregnancy prior to her last birth does not mean that the mother and child were exposed to the risk of tetanus; protection may have been provided by tetanus toxoid vaccinations before that pregnancy. Despite these drawbacks, the proportion of women receiving a tetanus toxoid vaccination during pregnancy provides a basic measure of the success of a country’s MCH efforts since routine immunization of pregnant women is an effective means of preventing neonatal tetanus.

The LDHS results suggest that the majority of mothers in Liberia receive at least some maternity care (see Table 6.5). Looking at prenatal care indicators, 83 percent of mothers had seen a doctor or trained nurse/midwife to check on the pregnancy, and 71 percent had had a tetanus toxoid injection before the last birth. More than 50 percent of the mothers also reported that they were assisted at the delivery of the last birth by a doctor or trained nurse/midwife, and 33 percent reported that a traditional birth attendant helped with the delivery (see Table 6.6).

Although maternity care seems to be widespread among Liberian women, there are noticeable differences between population subgroups in the maternal health care indicators presented in Tables 6.5 and 6.6. Older women, rural women, women living outside Montserrado County, women with no education, and women who practice traditional religion are less likely than their counterparts to have any prenatal care, receive a tetanus toxoid injection during pregnancy or be assisted at the delivery by a doctor or trained nurse/midwife. The relationship between these indicators and tribe is not as consistent, but in general, the percentages receiving care are lowest among women from the Gola, Grebo, Bassa, and Krahn tribes.

### **6.3 Child Health Indicators**

The LDHS included a series of questions intended to provide information on immunization coverage and on the occurrence and treatment of diarrhea, fever, and respiratory illness among children under the age of five. The children for whom these data were collected do not include all children under five in Liberia, but only children of women who were eligible for interview in the LDHS. Thus, no information was obtained for children of mothers who had died, who were institutionalized, or who, for some other reason, were not interviewed in the survey. Although the immunization status and morbidity experience of the latter children are likely to differ from that of children whose mothers were interviewed, their numbers are not large so that the results presented below can be considered as generally describing the health status of children under five years of age in Liberia.

TABLE 6.5 PERCENTAGE DISTRIBUTION OF WOMEN AGED 15-49 WHO HAVE GIVEN BIRTH IN THE FIVE YEARS PRECEDING THE SURVEY BY TYPE OF PRENATAL CARE PRIOR TO THE MOST RECENT BIRTH, AND PERCENTAGE OF SUCH WOMEN WHO RECEIVED A TETANUS TOXOID INJECTION PRIOR TO MOST RECENT BIRTH, ACCORDING TO BACKGROUND CHARACTERISTICS OF MOTHER, LIBERIA, 1986

Characteristic	Type of Prenatal Care				Total Percent	Percent Received Tetanus Injection	Wtd. Number of Women
	Doctor	Trained Nurse/ Midwife	Other	No Care			
<u>Age</u>							
Under 30	18.4	67.6	1.0	12.9	100.0	74.0	1,991
30 and over	16.2	60.6	1.2	21.8	100.0	66.6	1,083
<u>Urban-Rural</u>							
Urban	25.2	66.2	0.3	8.2	100.0	76.8	1,256
Rural	12.4	64.4	1.6	21.4	100.0	67.6	1,817
<u>Region</u>							
Sinoe	22.3	62.9	1.4	13.4	100.0	60.4	87
Grand Gedeh	9.2	62.4	0.5	27.4	100.0	47.9	193
Montserrado	29.8	61.6	0.2	8.3	100.0	76.2	780
Rest of country	13.5	66.9	1.4	18.0	100.0	72.2	2,013
<u>Education</u>							
No education	12.4	65.2	1.4	21.0	100.0	67.0	2,001
Primary	20.1	69.0	0.9	10.0	100.0	75.3	531
Secondary or more	35.1	61.2	0.0	3.7	100.0	83.8	543
<u>Religion</u>							
Christian	19.4	65.1	1.0	14.3	100.0	72.9	1,592
Muslim	18.2	70.6	0.9	10.0	100.0	75.8	481
Trad'l/Other	11.4	63.4	0.8	24.3	100.0	64.6	587
None	18.9	61.3	2.0	17.8	100.0	70.0	414
<u>Tribe</u>							
Bassa	16.1	60.0	0.0	23.9	100.0	64.8	368
Gio	23.5	66.0	2.9	7.6	100.0	82.3	234
Gola	9.1	63.6	0.0	27.3	100.0	55.7	121
Grebo	17.4	62.1	1.0	19.3	100.0	57.7	220
Kpelle	11.8	69.3	1.6	17.3	100.0	72.4	540
Krahn	15.6	60.8	1.2	22.0	100.0	52.7	138
Kru/Sapo	24.3	60.1	0.7	15.0	100.0	69.3	311
Lorma	16.7	74.7	0.0	8.7	100.0	87.0	159
Mandingo	20.0	70.6	0.0	9.4	100.0	76.7	203
Mano	18.8	59.1	2.2	19.9	100.0	69.6	249
Other/None	19.7	67.8	1.0	11.0	100.0	79.6	530
<b>Total</b>	<b>17.7</b>	<b>65.2</b>	<b>1.1</b>	<b>16.0</b>	<b>100.0</b>	<b>71.4</b>	<b>3,074</b>

Note: Women giving birth 1-59 months before the survey are included.

TABLE 6.6 PERCENT DISTRIBUTION OF WOMEN AGED 15-49 WHO HAVE GIVEN BIRTH IN THE FIVE YEARS PRECEDING THE SURVEY BY TYPE OF ASSISTANCE AT DELIVERY OF THE MOST RECENT BIRTH, ACCORDING TO BACKGROUND CHARACTERISTICS OF MOTHER, LIBERIA, 1986

Characteristic	Type of Assistance at Delivery					Total Percent	Weighted Number of Women
	Doctor	Trained Nurse/Midwife	Trad'l Birth Att'dnt	Rel'tve/Friend	No One		
<u>Age</u>							
Under 30	6.9	54.3	29.9	7.0	1.9	100.0	1,991
30 and over	6.0	46.3	38.2	7.3	2.1	100.0	1,083
<u>Urban-Rural</u>							
Urban	10.0	66.9	16.6	4.4	2.0	100.0	1,256
Rural	4.3	40.8	44.0	9.0	1.9	100.0	1,817
<u>Region</u>							
Sinoe	3.9	40.4	44.3	8.9	2.5	100.0	87
Grand Gedeh	2.2	34.8	24.9	31.7	6.1	100.0	193
Montserrado	12.9	65.6	15.0	4.3	2.1	100.0	780
Rest of country	4.7	48.1	39.9	5.8	1.4	100.0	2,013
<u>Education</u>							
No education	4.9	44.5	41.0	7.7	1.9	100.0	2,001
Primary	5.1	56.5	26.9	9.0	2.3	100.0	531
Secondary or more	14.4	72.3	8.3	3.2	1.8	100.0	543
<u>Religion</u>							
Christian	7.1	57.0	25.8	7.5	2.5	100.0	1,592
Muslim	8.3	54.7	29.2	6.1	1.5	100.0	481
Trad'l/Other	4.5	41.9	46.0	6.9	0.7	100.0	587
None	5.6	40.0	45.1	7.4	1.8	100.0	414
<u>Tribe</u>							
Bassa	6.4	46.5	40.8	4.5	1.9	100.0	368
Gio	2.3	54.8	42.3	0.0	0.6	100.0	234
Gola	1.1	31.8	47.7	15.9	3.4	100.0	121
Grebo	7.6	49.5	18.7	15.8	8.3	100.0	220
Kpelle	5.9	40.7	45.9	6.4	1.0	100.0	540
Krahn	6.6	43.2	19.0	28.6	2.1	100.0	138
Kru/Sapo	7.7	57.0	24.8	6.7	3.7	100.0	311
Lorma	7.7	71.4	15.6	4.4	0.9	100.0	159
Mandingo	8.8	65.6	22.1	3.3	0.2	100.0	203
Mano	5.0	50.8	43.6	0.6	0.0	100.0	249
Other/None	9.1	57.5	24.4	7.2	1.4	100.0	530
Total	6.6	51.5	32.8	7.1	1.9	100.0	3,074

Note: Women giving birth 1-59 months before the survey are included.



## Immunization of Children

In the LDHS, women who had children under the age of five were asked if the children had health cards. If a health card was available, the interviewers copied from the card the dates on which the child had received immunizations against the following diseases: tuberculosis (BCG); diphtheria, whooping cough (pertussis) and tetanus (DPT); polio; and measles. If the child had no card or the interviewer was not able to examine the card, the mother was asked if the child had ever received a vaccination. However, no information was obtained on specific vaccinations for these children because of doubts about the reliability of the mother's recall.

The data in Table 6.7 indicate that immunization cards were seen for slightly more than one-third of all children under the age of five. Of those with cards available, almost all had received at least one immunization. This is not surprising, since one of the major reasons for issuing a health card is to record immunizations. For another 32 percent, vaccination cards were unavailable but their mothers reported that they had been immunized. Thus, in Liberia, around two out of every three children under the age of five may be assumed to have received some immunization.

The information on specific immunizations collected for children with health cards is also presented in Table 6.7. In examining these data, it should be borne in mind that the World Health Organization recommends that children be fully immunized before they reach the first birthday, according to the schedule outlined below (Sherris, et.al., 1986):

<u>Age</u>	<u>Immunizations</u>
Birth	BCG
6 weeks	DPT, Polio
10 weeks	DPT, Polio
14 weeks	DPT, Polio
9 months	Measles

The LDHS found that, among children age one year and over for whom health cards were available, almost 80 percent had received a BCG vaccination and more than 60 percent had been immunized against measles. DPT and polio coverage was much lower; although 80 percent or so of the children age one year or older had had at least the first immunization against both DPT and polio, less than 30 percent have received either the three DPT or the three polio doses considered necessary for full protection. Overall, only about one out of five children age one year and over with health cards was fully immunized, i.e., had received BCG and measles vaccinations and completed three doses of DPT and polio.

Immunization coverage rates do not differ between boys and girls. Both the residence and educational status of the child's mother are, however, associated with immunization coverage, with the highest rates of coverage reported for children of urban women, of women living in Montserrado County, and of women with a secondary education (Table 6.7). Considering differentials by religion, immunization coverage is greatest among children whose mothers are Christian.

TABLE 6.7 AMONG ALL CHILDREN UNDER 5 YEARS OF AGE, THE PERCENTAGE WITH HEALTH CARDS AND THE PERCENTAGE RECORDED ON HEALTH CARD OR REPORTED BY MOTHER AS HAVING BEEN IMMUNIZED AND, AMONG CHILDREN WITH HEALTH CARDS, THE PERCENTAGE FOR WHOM BCG, DPT, POLIO, AND MEASLES ARE RECORDED AND THE PERCENTAGE CONSIDERED TO BE FULLY IMMUNIZED, ACCORDING TO BACKGROUND CHARACTERISTICS OF CHILD AND MOTHER, LIBERIA, 1986

	Percent of Children Under 5:			Percent of Children Under 5 Who Have Received:									Wtd.No. of Child'n Under 5
	With Health Cards	Immunized as Rec'd on Health Cards	Immunized as Rep't'd by Mother	BCG	DPT			Polio			Measles	All Immunizations	
					1	2	3	1	2	3			
<u>Age</u>													
<6 mos.	34.0	31.5	12.5	85.4	54.4	13.7	4.8	63.9	20.1	8.0	8.9	0.8	510
6-11 mos.	44.4	43.4	22.4	89.8	78.7	32.4	15.7	79.8	32.9	12.6	23.5	6.9	607
12-17 mos.	42.3	40.3	28.3	81.9	82.9	42.2	28.5	77.4	39.3	24.1	63.6	21.4	478
18-23 mos.	43.8	42.4	30.9	82.7	90.2	52.4	34.7	85.8	46.8	30.1	72.6	23.4	338
24-35 mos.	36.0	35.2	36.0	75.6	84.2	42.6	27.5	71.8	39.3	24.8	71.7	16.8	762
36-59 mos.	24.9	24.0	40.7	75.1	84.6	45.2	28.2	71.1	42.1	27.6	69.5	21.5	1,529
<u>Sex</u>													
Boy	34.2	32.6	32.1	81.1	80.7	40.6	24.7	74.1	38.4	22.7	53.4	15.8	2,143
Girl	34.4	33.4	31.2	80.6	79.6	37.2	22.6	74.6	36.3	20.7	53.9	15.4	2,081
<u>Urban-Rural</u>													
Urban	37.1	36.1	35.6	84.2	78.1	38.5	27.0	74.6	39.6	25.8	49.1	17.6	1,743
Rural	32.3	30.8	28.9	78.2	81.8	39.2	21.0	74.2	35.5	18.4	57.3	14.0	2,481
<u>Region</u>													
Sinoe	22.3	22.6	33.4	59.9	91.5	20.4	7.2	69.7	16.5	5.9	47.4	3.3	123
Grand Gedeh	23.0	22.6	29.6	76.3	81.2	16.1	9.7	70.4	12.4	4.8	40.3	3.2	258
Montserrado	31.7	31.0	40.4	84.9	79.2	37.6	27.8	80.4	38.4	26.9	48.6	20.4	1,065
Rest of c'try	36.9	35.2	28.4	80.4	80.1	41.1	23.5	72.7	39.0	21.4	56.2	15.1	2,778
<u>Education</u>													
No education	32.0	30.4	29.1	79.6	76.9	36.3	18.9	71.5	33.9	16.7	51.8	11.6	2,783
Primary	36.5	35.7	31.8	81.6	81.6	27.7	15.3	74.1	28.5	16.0	50.4	9.3	731
Secondary+	41.0	40.6	41.6	84.0	88.8	57.0	45.8	83.4	55.9	42.3	62.0	33.7	710
<u>Religion</u>													
Christian	35.6	34.8	32.5	82.6	81.7	41.4	26.8	75.8	40.5	25.8	55.2	19.3	2,140
Muslim	34.0	31.7	34.3	78.7	74.8	41.9	24.0	70.9	36.8	19.6	51.9	14.0	666
Trad'l/Other	31.7	31.0	30.4	80.2	84.2	34.1	16.7	76.4	31.4	12.5	48.9	9.4	834
None	33.3	31.1	27.4	77.6	74.9	32.1	20.1	69.9	33.4	20.5	55.8	11.3	584
<u>Tribe</u>													
Bassa	32.3	29.2	22.3	75.9	74.1	41.2	30.0	71.6	41.2	30.9	51.0	23.2	497
Gio	19.7	19.7	42.4	70.4	74.6	11.1	6.6	47.1	13.2	8.7	59.5	2.4	331
Gola	25.2	24.4	32.5	71.0	93.6	48.4	25.8	83.9	45.2	32.3	61.3	19.4	169
Grebo	35.0	34.5	31.9	75.5	91.4	41.4	32.1	77.2	36.8	27.1	41.4	17.4	305
Kpelle	43.5	42.4	24.2	83.5	77.5	39.9	22.5	76.0	40.5	21.0	57.7	14.4	768
Krahn	17.8	18.0	30.5	86.5	85.9	36.2	28.0	83.7	34.2	25.0	43.7	19.7	180
Kru/Sapo	25.9	25.6	37.7	77.5	87.1	25.9	17.3	76.1	27.9	14.8	46.8	10.8	435
Lorma	48.5	47.8	27.5	90.4	86.3	53.4	38.4	87.7	53.4	37.0	61.6	27.4	207
Mandingo	37.6	35.6	35.5	72.6	73.9	47.2	25.5	69.6	36.2	18.8	52.9	12.1	273
Mano	26.6	25.8	38.1	84.6	76.9	27.7	15.4	64.6	24.6	10.8	52.3	6.2	336
Other/None	41.7	39.5	34.1	85.5	79.5	41.1	20.7	76.0	38.7	18.3	53.9	16.0	723
<u>Total</u>	34.3	33.0	31.6	80.9	80.2	38.9	23.6	74.4	37.3	21.7	53.6	15.6	4,224

Looking at tribe, the highest rates are observed for children of women belonging to the Lorma and Bassa tribes.

### **Child Morbidity and Treatment**

In addition to the immunization data, information was collected for all children under the age of five on the occurrence of diarrhea, fever, and respiratory illness in the four weeks preceding the interview and the treatment provided for children experiencing these illnesses. Information was also collected on whether the children had ever had measles. The data on diarrhea, fever, and respiratory illness cannot be used to measure incidence of these ailments. However, they provide the basis for a period prevalence estimate for each illness, i.e., the percentage of children under 5 years whose mothers report that they had the illness in question during the four weeks preceding the survey. In considering the morbidity information, it is important to remember that the measures are influenced by the mother's subjective evaluation of whether the child experienced the illness in question. For example, the question on diarrhea simply asked the mother whether the child had "running stomach" during the the last four weeks. The responses to the question are clearly dependent on what the mother understood by the term "running stomach" and, thus, there may be considerable variation in the length and severity of the diarrheal episodes reported in response to the question.

The morbidity measures also are affected by the reliability of the mother's recall as to when the episode of the illness in question occurred. Both the failure to report illness occurring within the reference period of four weeks and the reporting of episodes that occurred prior to the four week period affect the accuracy of the prevalence estimate. In interpreting the morbidity data, the period in which the LDHS fieldwork took place (March-July) should be kept in mind since the number of cases of the illnesses in question—diarrhea, fever, and respiratory problems—vary seasonally.

### **Diarrhea**

Table 6.8 shows the percentage of children under the age of five reported as having had diarrhea during the four-week period prior to the survey. According to their mothers, four out of ten children in this age group had had at least one episode of diarrhea during the period in question. Diarrhea prevalence rates varied with the age of the child, with the rate exceeding 50 percent among children aged 12 to 24 months. The sex differential was insignificant—40 percent of boys were reported as having had diarrhea compared to 38 percent of girls.

Diarrheal prevalence was lower among children of urban mothers and children whose mothers had at least secondary education. However, the percentage reported as having had diarrhea exceeded 30 percent, even among those children whose mothers were living in urban areas or whose mothers had had a secondary education. By region, diarrhea prevalence was lowest in Montserado County. Considering tribe, it was highest for the Bassa and Gola and lowest among the Mandingo.

For children who had had a diarrheal episode in the four weeks preceding the survey, Table 6.8 also indicates what, if anything, mothers said that they had done to treat the diarrhea. In over 80 percent of the cases, some effort was made to treat the diarrhea. Among mothers who treated the diarrhea, the most frequently reported treatment was antibiotics; 44 percent of the children who had diarrhea during the four weeks before the survey were given antibiotics. Country

TABLE 6.8 AMONG ALL CHILDREN UNDER 5 YEARS OF AGE, THE PERCENTAGE REPORTED BY THE MOTHER AS HAVING HAD DIARRHEA IN THE FOUR WEEKS PRECEDING THE SURVEY AND, AMONG CHILDREN WITH DIARRHEA, THE PERCENTAGE RECEIVING VARIOUS TREATMENTS, ACCORDING TO BACKGROUND CHARACTERISTICS OF CHILD AND MOTHER, LIBERIA, 1986

Characteristic	Among Children Under 5, Percent Reported Having Diarrhea in Past 4 Weeks	Among Children with Diarrhea, Percent Treated with: <sup>a</sup>					Wtd.No. of Child'n Under 5 <sup>b</sup>	
		ORS	Home Salt/Sugar Solution	Anti-biotics	Country Medicine/Herbs	Other Treatment		No Treatment
<u>Age</u>								
< 6 mos.	33.6	3.4	3.2	39.1	32.7	5.1	22.0	510
6-11 mos.	48.4	7.0	3.4	40.6	30.9	4.0	14.9	607
12-17 mos.	57.7	7.6	4.8	45.9	22.1	8.0	13.0	478
18-23 mos.	52.1	4.9	3.1	56.1	22.2	5.7	8.6	338
24-35 mos.	44.9	7.1	3.4	44.9	21.6	6.2	15.7	762
36-59 mos.	25.8	6.8	1.7	39.8	27.4	3.1	20.0	1,529
<u>Sex</u>								
Boy	40.0	6.4	3.5	42.0	27.7	5.1	16.1	2,143
Girl	38.3	6.5	2.9	45.5	24.1	5.2	16.0	2,081
<u>Urban-Rural</u>								
Urban	36.3	9.8	3.1	54.5	13.7	5.6	14.3	1,743
Rural	41.1	4.4	3.3	36.9	33.5	4.9	17.1	2,481
<u>Region</u>								
Sinoe	39.7	1.5	0.0	57.6	22.9	1.1	17.0	123
Grand Gedeh	37.4	3.0	2.0	33.0	32.0	6.9	23.8	258
Montserrado	33.6	10.4	3.9	57.3	14.2	5.4	12.3	1,065
Rest of c'try	41.4	5.7	3.2	39.7	29.2	5.1	16.5	2,778
<u>Education</u>								
No education	40.2	4.5	2.3	42.6	30.4	4.0	16.2	2,783
Primary	42.1	9.2	4.6	44.0	21.9	7.9	14.5	731
Secondary+	31.9	12.3	5.6	48.3	9.4	7.3	17.6	710
<u>Religion</u>								
Christian	39.5	6.7	3.6	45.0	26.3	4.4	15.3	2,140
Muslim	33.9	5.0	3.7	45.9	20.9	8.1	13.9	666
Trad'l/Other	38.8	5.7	2.6	45.7	23.9	4.1	18.1	834
None	44.3	7.8	2.4	34.9	31.6	6.6	17.8	584
<u>Tribe</u>								
Bassa	45.6	4.3	4.3	30.7	34.0	5.5	22.5	497
Gio	41.6	13.0	4.0	30.0	33.0	8.0	10.0	331
Gola	47.2	10.3	5.2	41.4	39.7	3.5	6.9	169
Grebo	38.8	3.8	7.8	44.3	23.0	7.1	17.8	305
Kpelle	41.7	4.9	1.5	45.7	33.4	2.7	10.5	768
Krahn	39.5	6.1	0.5	30.9	30.8	8.8	27.6	180
Kru/Sapo	40.0	5.9	5.5	55.9	16.5	5.9	13.3	435
Lorma	32.8	6.1	0.0	61.5	4.1	6.1	22.3	207
Mandingo	28.0	5.8	0.0	44.4	18.4	10.8	13.4	273
Mano	40.6	9.1	2.0	33.3	34.3	4.0	17.2	336
Other/None	34.0	6.2	2.8	56.6	10.7	3.4	19.8	723
<u>Total</u>	39.1	6.5	3.2	43.7	25.9	5.2	16.0	4,224

<sup>a</sup> Mothers were able to specify more than one treatment, so percents may add to more than 100.

<sup>b</sup> Includes children aged 1-59 months

medicine or herbs was the second most commonly employed treatment. The latter treatment may have had some effect on dehydration, the chief cause of death among children with diarrhea. Few mothers relied on oral rehydration therapy (ORT), a relatively cheap and effective means of preventing or treating dehydration. Less than 10 percent of the children were treated with a solution of oral rehydration salts (ORS) or with a home prepared salt/sugar solution.

Differences in treatments generally followed expected patterns. Use of antibiotics was greatest among urban, well-educated mothers, presumably because modern medical products were more available and more affordable for these women than for women living in rural areas or those with less than a secondary education. Although antibiotics remained the predominant treatment given by mothers in the latter categories, they were more likely than those in urban areas or those with secondary education to say they had used country medicine or herbs. The somewhat greater reliance on ORT among urban, well-educated women also likely reflects the fact that women in these categories have greater access to ORS packets or exposure to informational efforts designed to promote the use of homemade salt and sugar solutions.

### **Fever**

In Table 6.9, information is presented on the percentage of children under the age of five reported to have had fever during the four weeks prior to the LDHS interview. Malaria is endemic in Liberia, and the questions on fever were designed to obtain an estimate of the extent to which children experienced a bout of malaria during the reference period. Overall, mothers reported that one out of two children under age five had had fever during the month before the survey.

The age of the child was related to the reported episode of fever, with the prevalence peaking at 67 percent among children age 12–17 months. There was no evidence of sex differentials in the reporting of fever prevalence. The likelihood that a child had had fever varied somewhat with the residence and education of the mother, but even among children of urban, educated mothers, the percentage suffering from fever exceeded 40 percent.

The overwhelming reliance on antimalarial medication to treat fever suggests that malaria was considered to be the cause of the fever in the majority of the reported cases. Table 6.9 shows that roughly three out of four children who experienced fever during the month before the survey were given antimalarial drugs to treat the fever. Other treatments reported by mothers included country medicine, which was used in treating 12 percent of the children who had fever and antibiotics, which were used in treating less than 4 percent of the cases.

Table 6.9 shows that there is little variation in the percentage of children receiving treatment for fever, with either the age or sex of the child. However, the type of treatment given differs somewhat according to the socioeconomic characteristics of the mother. Although antimalarial drugs were the most commonly employed treatment in all subgroups, the percentages treated with antimalarials are highest among children of urban women, of women living in Montserrado County and of women with secondary education. Access to pharmaceutical products again is likely to be greater for these groups than for others in the population.

**TABLE 6.9** AMONG ALL CHILDREN UNDER 5 YEARS, THE PERCENTAGE REPORTED BY THE MOTHER AS HAVING FEVER IN THE FOUR WEEKS PRECEDING THE SURVEY AND, AMONG CHILDREN WITH FEVER, THE PERCENTAGE RECEIVING VARIOUS TREATMENTS, ACCORDING TO BACKGROUND CHARACTERISTICS OF CHILD AND MOTHER, LIBERIA, 1968

Charac- teristic	Among Children Under 5, Percent Having Fever in Past 4 Weeks	Among Children With Fever, Percent Treated with <sup>a</sup>				Wtd No. of Children Under 5 <sup>b</sup>	
		Anti- biotics	Anti- malarials	Country Med/Herbs	Other Treatmt		
<u>Age</u>							
< 6 mos.	41.9	3.9	66.7	15.8	1.6	11.3	510
6-11 mos.	63.2	3.1	74.4	11.3	5.0	9.7	607
12-17 mos.	67.4	5.7	73.9	11.3	4.5	9.5	478
18-23 mos.	61.1	3.6	78.8	7.5	3.8	10.0	338
24-35 mos.	53.8	2.3	76.4	10.3	3.4	9.4	762
36-59 mos.	40.9	3.9	71.2	12.5	2.8	12.0	1,529
<u>Sex</u>							
Boy	51.1	4.0	72.4	12.1	4.4	10.2	2,143
Girl	51.2	3.4	74.6	10.9	2.6	10.7	2,081
<u>Urban-Rural</u>							
Urban	45.5	3.8	87.3	3.8	3.6	4.9	1,743
Rural	55.2	3.6	65.4	16.0	3.5	13.7	2,481
<u>Region</u>							
Sinoe	49.7	3.5	60.2	19.2	8.3	14.5	123
Grand Gedeh	51.9	1.7	57.6	22.1	3.6	15.5	258
Montserrado	43.8	3.5	87.0	5.3	3.8	5.9	1,065
Rest of c'try	54.0	3.9	71.2	12.2	3.2	11.3	2,778
<u>Education</u>							
No education	52.9	2.7	69.4	13.5	2.5	13.2	2,783
Primary	49.7	6.0	77.9	9.2	4.9	6.3	731
Secondary+	46.0	5.9	86.8	5.4	6.6	2.7	710
<u>Religion</u>							
Christian	50.8	3.5	75.5	10.7	4.0	9.2	2,140
Muslim	54.8	3.8	75.8	10.7	3.9	9.7	666
Trad'l/Other	50.0	4.8	67.0	13.0	2.1	14.6	834
None	49.9	3.1	72.0	13.7	3.3	10.5	584
<u>Tribe</u>							
Bassa	46.2	1.2	67.6	15.6	9.0	10.2	497
Gio	50.9	3.5	73.7	9.8	0.0	10.6	331
Gola	63.4	2.6	68.0	20.5	5.1	6.4	169
Grebo	49.5	5.9	75.9	8.5	4.7	10.6	305
Kpelle	57.0	4.7	70.6	14.4	3.1	10.9	768
Krahn	47.3	3.1	62.9	23.3	2.2	11.2	180
Kru/Sapo	51.6	4.5	73.4	11.0	3.3	12.0	435
Lorma	46.0	2.9	82.7	11.6	2.9	4.3	207
Mandingo	48.8	1.0	87.1	4.4	3.1	6.4	273
Mano	51.6	3.2	74.6	10.3	0.0	11.9	336
Other/None	49.2	4.7	75.8	5.5	3.6	12.5	723
<u>Total</u>	51.2	3.7	73.5	11.5	3.5	10.5	4,224

<sup>a</sup> Mothers were able to specify more than one treatment, so percents may add to more than 100.

<sup>b</sup> Includes children aged 1-59 months

## **Cough/Difficult Breathing**

An attempt was made in the survey to obtain information on the prevalence of respiratory illness by asking for each child under the age of five whether the child had had cough or difficulty in breathing in the four weeks before the survey. Table 6.10 indicates that more than one-third of the children under the age of five were reported by the mothers as suffering from a cough or difficult breathing in the four weeks before the survey. The percentage reported as having some respiratory-related problem varied with the age of the child; the highest percentage—53 percent—was reported for children aged 6–11 months. Again there appeared to be little difference in the likelihood that a mother would report cough or difficult breathing with the sex of the child. Differences along socioeconomic lines were generally minor. The most evident differences were between Sinoe County and other areas and among tribes, with the lowest prevalence reported for the Mano (28 percent) and the highest prevalence for the Gola (49 percent).

Over 80 percent of the children experiencing cough or difficult breathing received some treatment for the problem. Again as with diarrhea and fever, mothers are most likely to use a pharmaceutical product in treating respiratory illness. Table 6.10 shows that 62 percent of the children who had a cough or difficult breathing were given cough syrup compared to 14 percent who were treated with country medicine or herbs and 2 percent who received antibiotics.

Treatment regimes varied less with the age and sex of the child than with the socioeconomic characteristics of the mother. Children whose mothers lived in urban areas, Montserrado County, and who had a secondary education were most likely to be treated with cough syrup. Mothers in Sinoe and Grand Gedeh Counties are more likely than other women to use country medicine or herbs.

## **Measles**

Information was also collected in the survey for all children under five as to whether or not they had ever had measles. Table 6.11 shows that about one out of five children is reported by the mother as having had measles. There is a clear direct relationship between the age of the child and the percentage who have ever had measles, with the percentage ranging from 2 percent among children under six months of age to 31 percent among those age 36–59 months. The percentage of boys with measles is almost identical to that reported for girls. Considering socioeconomic differentials, the higher percentages having measles that are recorded for children of urban and well-educated mothers may reflect a tendency for mothers in those categories to be better able to identify the disease, and thus, more likely to report its occurrence.

TABLE 6.10 AMONG ALL CHILDREN UNDER 5 YEARS, THE PERCENTAGE REPORTED BY THE MOTHER AS SUFFERING FROM COUGHING OR DIFFICULT BREATHING IN THE FOUR WEEKS PRECEDING THE SURVEY AND, AMONG CHILDREN WITH A COUGH OR DIFFICULT BREATHING, THE PERCENTAGE RECEIVING VARIOUS TREATMENTS ACCORDING TO BACKGROUND CHARACTERISTICS OF CHILD AND MOTHER, LIBERIA, 1986

Characteristic	Percent of Children Under 5 With Coughing or Difficult Breathing	Among Children With Coughing or Difficult Breathing, Percent Treated by: <sup>a</sup>					Wtd. No. of Children Under 5 <sup>b</sup>
		Anti-Biotics	Cough Syrup	Country Med/Herbs	Other Treatmt	No Treatmt	
<u>Age</u>							
< 6 mos.	36.3	3.0	57.8	14.4	0.9	24.0	510
6-11 mos.	52.5	0.1	59.9	9.8	6.3	22.8	607
12-17 mos.	42.1	2.1	61.5	15.7	2.3	18.4	478
18-23 mos.	41.3	6.2	63.3	11.4	5.6	11.8	338
24-35 mos.	32.8	1.7	63.9	13.8	3.6	15.6	762
36-59 mos.	30.9	2.0	63.2	15.5	5.4	15.0	1,529
<u>Sex</u>							
Boy	37.8	1.7	59.6	15.7	5.1	17.6	2,143
Girl	36.3	2.5	64.1	11.3	3.6	18.2	2,081
<u>Urban-Rural</u>							
Urban	35.4	1.6	78.4	4.7	4.1	10.9	1,743
Rural	38.3	2.4	51.0	19.4	4.6	22.4	2,481
<u>Region</u>							
Sinoe	17.3	5.1	32.2	27.1	20.3	21.2	123
Grand Gedeh	31.9	2.7	40.7	31.0	3.1	22.1	258
Montserrado	35.7	1.8	78.6	4.7	4.0	11.2	1,065
Rest of c'try	39.0	2.0	58.1	15.1	4.3	19.8	2,778
<u>Education</u>							
No education	37.2	1.5	56.9	17.4	3.4	20.4	2,783
Primary	38.6	2.7	66.6	8.3	3.5	18.2	731
Secondary+	35.2	3.5	76.8	3.8	9.4	7.2	710
<u>Religion</u>							
Christian	39.0	3.3	60.0	12.4	5.7	18.5	2,140
Muslim	36.5	0.0	61.8	18.3	3.4	16.6	666
Trad'l/Other	34.1	1.6	62.5	14.9	2.2	18.9	834
None	34.9	0.0	68.4	11.3	3.3	15.7	584
<u>Tribe</u>							
Bassa	43.6	0.0	56.8	17.8	5.7	17.8	497
Gio	30.4	1.4	71.2	8.2	0.0	17.8	331
Gola	48.8	1.7	50.0	38.3	3.3	8.3	169
Grebo	37.9	2.9	60.0	13.0	5.5	16.4	305
Kpelle	40.7	2.8	56.5	13.9	5.6	19.5	768
Krahn	36.0	7.8	55.3	19.6	3.6	15.3	180
Kru/Sapo	37.2	4.9	68.0	8.5	3.1	17.1	435
Lorma	33.4	0.0	65.7	10.0	2.4	21.9	207
Mandingo	29.3	0.0	70.8	8.6	3.4	15.5	273
Mano	27.5	3.0	74.6	6.0	3.0	13.4	336
Other/None	37.3	0.5	62.6	11.2	5.7	22.0	723
<u>Total</u>	37.1	2.1	61.8	13.6	4.4	17.9	4,224

a Mothers were able to specify more than one treatment, so percents may add to more than 100.

b Includes children aged 1-59 months



TABLE 6.11 AMONG ALL CHILDREN UNDER 5 YEARS OF AGE, THE PERCENTAGE REPORTED BY THE MOTHER AS EVER HAVING MEASLES, ACCORDING TO BACKGROUND CHARACTERISTICS, LIBERIA, 1986

Charac- teristic	Percent Ever Having Measles	Wtd. No.of Chil- dren*	Charac- teristic	Percent Ever Having Measles	Wtd. No.of Chil- dren*
<u>Age</u>			<u>Education</u>		
< 6 months	2.2	510	No education	17.6	2,783
6-11 months	8.8	607	Primary	23.1	731
12-17 months	14.8	478	Secondary+	24.3	710
18-23 months	19.9	338	<u>Religion</u>		
24-35 months	19.8	762	Christian	19.3	2,140
36-59 months	31.3	1,529	Muslim	19.9	666
<u>Sex</u>			Trad'l/Other	20.8	834
Boy	20.0	2,143	None	19.4	584
Girl	19.3	2081	<u>Tribe</u>		
<u>Urban-Rural</u>			Bassa	16.1	497
Urban	23.4	1,743	Gio	23.3	331
Rural	17.1	2,481	Gola	14.6	169
<u>Region</u>			Grebo	18.4	305
Sinoe	12.8	123	Kpelle	15.2	768
Grand Gedeh	15.1	258	Krahn	18.5	180
Montserrado	28.6	1,065	Kru/Sapo	27.7	435
Rest of country	17.0	2,778	Lorma	15.3	207
Total	19.7	4,224	Mandingo	25.5	273
			Mano	19.7	336
			Other/None	21.6	723

\* Includes children aged 1-59 months

## APPENDIX A: SURVEY DESIGN

### Sample Design and Implementation

The sample for the Liberia Demographic and Health Survey was based on the sampling frame of about 4,500 censal enumeration areas (EAs) that were created for the 1984 Population Census. It was decided to eliminate very remote EAs prior to selecting the sample. The definition of remoteness used was “any EA in which the largest village was estimated to be more than 3–4 hours’ walk from a road.” According to the 1984 census, the excluded areas represent less than 3 percent of the total number of households in the country. Since the major analytic objective of the LDHS was to adequately estimate basic demographic and health indicators including fertility, mortality, and contraceptive prevalence for the whole country and the two subuniverses (Sinoe and Grand Gedeh Counties), it was decided to oversample these two counties. Consequently, three explicit subuniverses of EAs were created: (1) Sinoe County, (2) Grand Gedeh County, and (3) the rest of the country.

The design provided a self-weighted sample within each subuniverse, but, because of the over-sampling in Sinoe and Grand Gedeh Counties, the sample is not self-weighting at the national level. Eligible respondents for the survey were women aged 15–49 years who were present the night before the interview in any of the households included in the sample selected for the LDHS. The total sample size was expected to be about 6,000 women aged 15–49 with a target by subuniverse of 1,000 each in Sinoe and Grand Gedeh Counties and 4,000 in the rest of the country.

It was decided that a sample of approximately 5,500 households selected through a two-stage procedure would be appropriate to reach those objectives. Sampling was carried out independently in each subuniverse. In the rest of the country subuniverse, counties were arranged for selection in serpentine order from the northwest (Cape Mount County) to the southeast (Maryland County). In the first stage EAs were selected systematically with probability proportional to size (size = number of households in 1984).

Twenty-four EAs were selected in each of Sinoe and Grand Gedeh Counties and 108 EAs in the rest of the country. The overall sampling fractions were:

$$\begin{aligned} f &= (846/8107) && \text{for Sinoe County,} \\ f &= (840/15755) && \text{for Grand Gedeh County and,} \\ f &= (3795/303827) && \text{for the rest of the country.} \end{aligned}$$

In each selected EA, a listing of all households was made and for the second stage, a sub-sample of households in each EA was chosen to be interviewed in such a way as to have a self-weighting sample in each subuniverse.

In summary, in each subuniverse, we have the following sampling probabilities at the two stages:

$$P_{1i} = \frac{m N_i}{N} = \frac{N_i}{I}$$

$$P_{2i} = \frac{b_i}{N_i^*}$$

- where:
- $m$  = number of EAs selected in the subuniverse,
  - $N_i$  = number of households in the  $i$ -th EA in the 1984 Census,
  - $N$  = total number of households in the subuniverse in the 1984 Census,
  - $N_i^*$  = number of households in the  $i$ -th EA in the 1986 household listing,
  - $I$  =  $(N/m)$ , interval of selection for EAs,
  - $b_i$  =  $(If N_i^*) / N_i$ , where  $f$  is the overall sampling fraction in the subuniverse.

The self-weighting characteristics in each subuniverse are imposed by the following condition:

$$P_{1i} P_{2i} = f$$

The household selection in each EA was carried out with the selection of a run of  $b_i$  contiguous households in the listing, with the first household randomly selected. In cases in which the random number was high enough that the run reached the end of the household listing, the selection continued with the beginning of the listing, assuming a circular list.

Data collection began in late February 1986 and was largely completed by July. A total of 5,239 women aged 15–49 years were successfully interviewed in the LDHS. Of these, 834 were interviewed in Sinoe County, 920 in Grand Gedeh, and 3,485 in the rest of the country.

The weighting factors used to provide national estimates were:

$w = 0.180202$  for Sinoe County

$w = 0.318122$  for Grand Gedeh County

$w = 1.376195$  for the rest of the country.

## **Characteristics of the Sample**

Table A.1 provides data on the outcome of attempts to interview selected households and eligible women. Out of the total of 6,006 households selected, 14.5 percent were found not to be valid households in the field, either because the dwelling had been vacated or destroyed, or the household could not be located or did not exist. Of the 5,609 households that were found to exist, 90 percent were successfully interviewed.

In the households that were interviewed, a total of 5,340 women were identified as being eligible for individual interview (that is, they were aged 15–49 and had spent the night before the interview in the selected household). This represents an average of slightly over one eligible woman per household. The response rate for eligible women was 98 percent. The main reason for nonresponse was the absence of the woman. Similar data are presented by sample subuniverse.

TABLE A.1 DATA ON SAMPLE IMPLEMENTATION AND RESPONSE RATES, LIBERIA, 1986

	Sinoe	Grand Gedeh	Rest of Country	Liberia
<u>Selected households</u>	914	945	4,147	6,006
Not located	4.3	2.8	4.3	4.1
Not a household	0.8	0.9	1.4	1.2
Dwelling destroyed, under construction	0.3	2.3	1.3	1.3
Dwelling vacant	5.6	7.2	8.5	7.9
Household found	89.0	86.8	84.5	85.5
Total	100.0	100.0	100.0	100.0
<u>Households found</u>	865	888	3,856	5,609
Not interviewed	6.5	9.7	11.5	10.4
Interviewed	93.5	90.3	88.5	89.6
Total	100.0	100.0	100.0	100.0
<u>Eligible women</u>	836	942	3,562	5,340
Not interviewed	0.2	2.3	2.2	1.9
Absent	0.0	1.2	0.9	0.8
Deferred	0.0	0.2	0.1	0.1
Refused	0.1	0.3	0.6	0.5
Other	0.1	0.6	0.6	0.5
Interviewed	99.8	97.7	97.8	98.1
Total	100.0	100.0	100.0	100.0
Average no. eligible women per household	1.03	1.17	1.04	1.06

## APPENDIX B: ESTIMATES OF SAMPLING ERROR

The results from sample surveys are affected by two types of errors: (1) nonsampling error and (2) 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 questions are asked, misunderstanding of the questions on the part of either the interviewer or the respondent, data entry errors, etc. Although efforts were made during the design and implementation of the Liberia Demographic and Health Survey to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

The sample of women selected in the LDHS is only one of many samples of the same size that could have been selected from the same population, using the same design. Each one would have yielded results that differed somewhat from the actual sample selected. The variability observed between all possible samples constitutes sampling error, which, although it is not known exactly, can be estimated from the survey results. Sampling error is usually measured in terms of the "standard error" of a particular statistic (mean, percentage, etc.), which is the square root of the variance of the statistic across all possible samples of equal size and design. The standard error can be used to calculate confidence intervals within which one can be reasonably assured the true value of the variable for the whole population falls. For example, for any given statistic calculated from a sample survey, the value of that same statistic as measured in 95 percent of all possible samples of identical size and design 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 LDHS sample design depended on stratification, stages, and clusters and consequently, it was necessary to utilize more complex formulas. The computer package CLUSTERS was used to assist in computing the sampling errors with the proper statistical methodology.

The CLUSTERS program treats any percentage or average as a ratio estimate,  $r = y/x$ , where both  $x$  and  $y$  are considered to be random variables. The variance of  $r$  is computed using the formula given below, with the standard error being the square root of the variance:

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

in which,  $z_{hi} = y_{hi} - r x_{hi}$ , and  $z_h = y_h - r x_h$ ,

where  $h$  represents the stratum and varies from 1 to  $H$ ,  
 $m_h$  is the total number of EAs selected in the  $h$ -th stratum,  
 $y_{hi}$  is the sum of the values of variable  $y$  in cluster  $i$  in the  
 $h$ -th stratum,  
 $x_{hi}$  is the sum of the number of cases (women) in cluster  $i$  in  
the  $h$ -th stratum,  
 $f$  is the overall sampling fraction, which is so small that  
the CLUSTERS program 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 one indicates that the sample design is as efficient as a simple random sample and a value greater than one indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design.

Sampling errors are presented in Table B.2 for 25 variables considered to be of major interest. Results are presented for the whole country, for urban and rural areas and for the three geographic subuniverses. For each variable, the type of statistic (mean, proportion) and the base population (all women, currently married women) are given in Table B.1. For each variable, Table B.2 presents the value of the statistic,  $R$ , its standard error,  $SE$ , the actual number of cases,  $N$ , the weighted number of cases,  $WN$ , the DEFT value, the value of  $RHO$  (a measure of homogeneity of clustering), the relative standard error,  $SE/R$ , and the 95 percent confidence limits.

In general, the sampling errors for the country as a whole are small, which means that the LDHS results are reliable. For example, for the variable children ever born, the overall average from the sample is 3.119 and its standard error is 0.061. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e.,  $3.119 \pm (2 * 0.061)$ , which means that there is a high probability (95 percent) that the *true* average number of children ever born for all Liberian women falls within the interval of 2.998 to 3.241.

TABLE B.1 LIST OF SELECTED VARIABLES FOR WHICH SAMPLING ERRORS ARE CALCULATED, LIBERIA, 1986

Variable	Indicator	Base Population
Urban Population	Proportion	All women
No education	Proportion	All women
Secondary or more	Proportion	All women
Never in union	Proportion	All women
In union	Proportion	All women
Married before 18	Proportion	All women
Exposed	Proportion	In union
Children ever born	Mean	All women
Children surviving	Mean	All women
Pregnant	Proportion	In union
Knows any method	Proportion	In union
Knows method source	Proportion	In union
Ever use	Proportion	In union
Current use	Proportion	In union
Using pill	Proportion	In union
Using IUD	Proportion	In union
Using female sterilization	Proportion	In union
Using condom	Proportion	In union
Using rhythm	Proportion	In union
Approval F.P.	Proportion	In union
Husband approval F.P.	Proportion	In union
Wants to delay 2+ yrs.	Proportion	In union
Wants no more kids	Proportion	In union
Ideal family size	Mean	All women
Prop. of children dead	Proportion	All women



TABLE B.2 MEANS, STANDARD ERRORS, AND CONFIDENCE INTERVALS FOR SELECTED VARIABLES BY DOMAIN, LIBERIA, 1986

Variable	R	SE	N	WN	DEFT	ROH	SE/R	R-2SE	R+2SE
<u>LIBERIA</u>									
Urban Population	.432	.038	5239.0	5239.0	5.593	.929	.089	.355	.508
No education	.627	.021	5239.0	5239.0	3.109	.266	.033	.585	.668
Secondary or more	.190	.016	5239.0	5239.0	3.026	.250	.086	.157	.222
Never in union	.214	.013	5239.0	5239.0	2.279	.129	.060	.189	.240
In union	.675	.013	5239.0	5239.0	2.015	.094	.019	.649	.701
Married before 18	.497	.015	5239.0	5239.0	2.163	.113	.030	.467	.527
Exposed	.325	.011	3604.0	3538.5	1.382	.041	.033	.303	.346
Children ever born	3.119	.061	5239.0	5239.0	1.516	.040	.020	2.998	3.241
Children surviving	2.342	.037	5239.0	5239.0	1.224	.015	.016	2.267	2.416
Pregnant	.154	.007	3604.0	3538.5	1.122	.012	.044	.141	.168
Knows any method	.698	.019	3604.0	3538.5	2.466	.230	.027	.660	.736
Knows method source	.443	.022	3604.0	3538.5	2.600	.261	.049	.400	.486
Ever use	.188	.015	3604.0	3538.5	2.262	.186	.078	.158	.217
Current use	.064	.007	3604.0	3538.5	1.740	.092	.111	.050	.078
Using pill	.033	.004	3604.0	3538.5	1.486	.055	.133	.025	.042
Using IUD	.006	.002	3604.0	3538.5	1.363	.039	.302	.002	.009
Using female sterilization	.011	.002	3604.0	3538.5	1.373	.040	.218	.006	.016
Using condom	.000	.000	3604.0	3538.5	.000	-.045	.000	.000	.000
Using rhythm	.006	.002	3604.0	3538.5	1.347	.037	.298	.002	.009
Approval F.P.	.361	.018	3604.0	3538.5	2.264	.187	.050	.325	.397
Husband approval F.P.	.220	.013	3604.0	3538.5	1.954	.127	.061	.193	.247
Wants to delay 2+ yrs.	.334	.011	3604.0	3538.5	1.428	.047	.034	.311	.356
Wants no more kids	.172	.010	3604.0	3538.5	1.559	.065	.057	.152	.191
Ideal family size	5.978	.099	3961.0	3924.2	2.109	.141	.017	5.780	6.175
Prop. of children dead	.249	.008	5239.0	5239.0	1.921	.083	.033	.233	.266

TABLE B.2 (Continued)

Variable	R	SE	N	WN	DEFT	R	SE	N	WN	DEFT
			<u>URBAN</u>					<u>RURAL</u>		
Urban Population	1.000	-	-	-	-	.000	-	-	-	-
No education	.462	.027	1944.0	2262.4	2.410	.752	.024	3295.0	2976.6	3.127
Secondary or more	.333	.024	1944.0	2262.4	2.229	.081	.016	3295.0	2976.6	3.363
Never in union	.297	.020	1944.0	2262.4	1.891	.152	.014	3295.0	2976.6	2.162
In union	.585	.019	1944.0	2262.4	1.698	.744	.015	3295.0	2976.6	2.000
Married before 18	.414	.019	1944.0	2262.4	1.705	.560	.020	3295.0	2976.6	2.357
Exposed	.368	.014	1143.0	1324.3	1.015	.298	.014	2461.0	2214.2	1.501
Children ever born	2.820	.092	1944.0	2262.4	1.438	3.347	.078	3295.0	2976.6	1.514
Children surviving	2.188	.061	1944.0	2262.4	1.224	2.458	.046	3295.0	2976.6	1.181
Pregnant	.163	.011	1143.0	1324.3	.990	.149	.009	2461.0	2214.2	1.198
Knows any method	.779	.024	1143.0	1324.3	1.966	.650	.025	2461.0	2214.2	2.620
Knows method source	.571	.034	1143.0	1324.3	2.343	.366	.025	2461.0	2214.2	2.530
Ever use	.295	.023	1143.0	1324.3	1.700	.124	.016	2461.0	2214.2	2.404
Current use	.116	.013	1143.0	1324.3	1.353	.033	.007	2461.0	2214.2	1.981
Using pill	.060	.009	1143.0	1324.3	1.244	.018	.005	2461.0	2214.2	1.706
Using IUD	.012	.004	1143.0	1324.3	1.238	.002	.001	2461.0	2214.2	.000
Using female steril.	.014	.004	1143.0	1324.3	1.264	.009	.003	2461.0	2214.2	1.414
Using condom	.001	.001	1143.0	1324.3	.000	.000	.000	2461.0	2214.2	.000
Using rhythm	.014	.004	1143.0	1324.3	1.236	.001	.000	2461.0	2214.2	.000
Approval F.P.	.455	.024	1143.0	1324.3	1.602	.305	.023	2461.0	2214.2	2.509
Husband approval F.P.	.298	.021	1143.0	1324.3	1.569	.173	.016	2461.0	2214.2	2.124
Wants to delay 2+ yrs.	.399	.021	1143.0	1324.3	1.432	.294	.012	2461.0	2214.2	1.353
Wants no more kids	.194	.016	1143.0	1324.3	1.333	.158	.012	2461.0	2214.2	1.681
Ideal family size	5.221	.112	1515.0	1768.0	1.744	6.598	.144	2446.0	2156.2	2.270
Prop. of children dead	.224	.010	1944.0	2262.4	1.428	.266	.012	3295.0	2976.6	2.170

TABLE B.2 (Continued)

Variable	R	SE	N	WN	DEFT	R	SE	N	WN	DEFT
	<u>SINOE COUNTY</u>					<u>GRAND GEDEH COUNTY</u>				
Urban Population	.205	.092	834.0	150.3	6.590	.214	.095	920.0	292.7	7.022
No education	.652	.032	834.0	150.3	1.950	.691	.031	920.0	292.7	2.020
Secondary or more	.126	.021	834.0	150.3	1.842	.074	.013	920.0	292.7	1.511
Never in union	.227	.022	834.0	150.3	1.519	.167	.022	920.0	292.7	1.771
In union	.683	.030	834.0	150.3	1.869	.760	.022	920.0	292.7	1.587
Married before 18	.487	.026	834.0	150.3	1.481	.591	.028	920.0	292.7	1.696
Exposed	.288	.019	570.0	102.7	.986	.279	.021	699.0	222.4	1.262
Children ever born	3.573	.174	834.0	150.3	1.558	3.958	.232	920.0	292.7	2.168
Children surviving	2.481	.103	834.0	150.3	1.287	2.888	.157	920.0	292.7	1.942
Pregnant	.181	.020	570.0	102.7	1.228	.156	.021	699.0	222.4	1.517
Knows any method	.874	.023	570.0	102.7	1.623	.654	.031	699.0	222.4	1.707
Knows method source	.660	.034	570.0	102.7	1.727	.494	.034	699.0	222.4	1.807
Ever use	.154	.019	570.0	102.7	1.250	.133	.021	699.0	222.4	1.632
Current use	.044	.011	570.0	102.7	1.303	.030	.007	699.0	222.4	1.087
Using pill	.023	.006	570.0	102.7	.895	.014	.004	699.0	222.4	.988
Using IUD	.004	.002	570.0	102.7	.972	.001	.001	699.0	222.4	1.003
Using female steril.	.004	.002	570.0	102.7	.988	.011	.005	699.0	222.4	1.152
Using condom	.002	.002	570.0	102.7	1.007	.000	.000	699.0	222.4	.000
Using rhythm	.004	.002	570.0	102.7	.945	.001	.001	699.0	222.4	.991
Approval F.P.	.330	.024	570.0	102.7	1.235	.351	.038	699.0	222.4	2.118
Husband approval F.P.	.200	.021	570.0	102.7	1.236	.212	.025	699.0	222.4	1.614
Wants to delay 2+ yrs.	.296	.027	570.0	102.7	1.428	.371	.033	699.0	222.4	1.804
Wants no more kids	.125	.015	570.0	102.7	1.100	.149	.021	699.0	222.4	1.549
Ideal family size	7.428	.202	722.0	130.1	1.782	7.756	.377	627.0	199.5	2.320
Prop. of children dead	.306	.012	834.0	150.3	1.220	.270	.014	920.0	292.7	1.638

TABLE B.2 (Continued)

Variable	R	SE	N	WN	DEFT	R	SE	N	WN	DEFT
	<u>MONTERRADO COUNTY</u>					<u>REST OF COUNTRY</u>				
Urban Population	.923	.045	1060.0	1458.8	5.480	.247	.052	2425.0	3337.3	5.974
No education	.441	.030	1060.0	1458.8	1.980	.701	.029	2425.0	3337.3	3.071
Secondary or more	.359	.027	1060.0	1458.8	1.852	.128	.022	2425.0	3337.3	3.191
Never in union	.304	.022	1060.0	1458.8	1.531	.179	.017	2425.0	3337.3	2.198
In union	.564	.019	1060.0	1458.8	1.228	.716	.018	2425.0	3337.3	1.985
Married before 18	.391	.023	1060.0	1458.8	1.527	.536	.020	2425.0	3337.3	2.018
Exposed	.371	.024	598.0	823.0	1.212	.314	.013	1737.0	2390.4	1.188
Children ever born	2.781	.117	1060.0	1458.8	1.356	3.173	.077	2425.0	3337.3	1.312
Children surviving	2.131	.077	1060.0	1458.8	1.146	2.379	.046	2425.0	3337.3	1.025
Pregnant	.166	.015	598.0	823.0	.995	.149	.008	1737.0	2390.4	.963
Knows any method	.786	.031	598.0	823.0	1.848	.664	.025	1737.0	2390.4	2.211
Knows method source	.587	.049	598.0	823.0	2.407	.379	.025	1737.0	2390.4	2.173
Ever use	.291	.026	598.0	823.0	1.384	.159	.019	1737.0	2390.4	2.164
Current use	.120	.016	598.0	823.0	1.208	.049	.009	1737.0	2390.4	1.653
Using pill	.072	.012	598.0	823.0	1.099	.022	.005	1737.0	2390.4	1.394
Using IUD	.007	.003	598.0	823.0	.954	.006	.002	1737.0	2390.4	1.245
Using female steril.	.003	.002	598.0	823.0	.984	.014	.003	1737.0	2390.4	1.223
Using condom	.002	.002	598.0	823.0	1.016	.000	.000	1737.0	2390.4	.000
Using rhythm	.017	.006	598.0	823.0	1.188	.002	.001	1737.0	2390.4	.980
Approval F.P.	.457	.034	598.0	823.0	1.692	.330	.023	1737.0	2390.4	2.058
Husband approval F.P.	.299	.027	598.0	823.0	1.454	.194	.017	1737.0	2390.4	1.833
Wants to delay 2+ yrs.	.405	.026	598.0	823.0	1.313	.307	.014	1737.0	2390.4	1.235
Wants no more kids	.189	.020	598.0	823.0	1.265	.170	.013	1737.0	2390.4	1.399
Ideal family size	5.094	.153	842.0	1158.8	1.793	6.175	.136	1770.0	2435.9	1.972
Prop. of children dead	.234	.014	1060.0	1458.8	1.469	.250	.011	2425.0	3337.3	1.783



## **APPENDIX C: SURVEY QUESTIONNAIRES**

REPUBLIC OF LIBERIA  
 MINISTRY OF PLANNING AND ECONOMIC AFFAIRS  
 1986 DEMOGRAPHIC AND HEALTH SURVEY

IDENTIFICATION	
COUNTY .....	□ □
DISTRICT .....	□ □
TOWN/VILLAGE _____	
EA No. _____	
CLUSTER NUMBER .....	□ □ □ □
STRUCTURE NUMBER _____	
HOUSEHOLD NUMBER .....	□ □ □ □
NAME OF HOUSEHOLD HEAD _____	

INTERVIEWER VISITS				
	1	2	3	
DATE				
INTERVIEWER NAME				
RESULT*				RESULT □
DATE: NEXT VISIT TIME:				
* RESULT CODES: 1 COMPLETED 2 NO COMPETENT RESPONDENT AT HOME 3 DEFERRED 4 REFUSED 5 DWELLING VACANT 6 ADDRESS NOT A DWELLING 7 HOUSEHOLD NOT FOUND OR NONEXISTENT 8 OTHER (SPECIFY) _____				NO. OF VISITS □

	FIELD EDITED BY	OFFICE EDITED BY	KEYED BY	
NAME	_____	_____	_____	
DATE	_____	_____	_____	

**HOUSEHOLD QUESTIONNAIRE**

I would like some information about the people who usually live in your household or are staying with you now.

LINE NO.	NAMES OF USUAL RESIDENTS AND VISITORS	RESIDENCE		SEX	AGE	FOR ALL UNDER AGE 15	FOR ALL AGED 15 AND OVER		PUT # CHECK FOR ALL WOMEN
		Does (NAME) usually live here?	Did (NAME) sleep here last night?				How old is he/she	Does this child's mother usually live in this household?	
(1)	(2)	YES=1 NO =2 (3)	YES=1 NO =2 (4)	M=1 F=2 (5)	(6)	YES=1 NO =2 (7)	(8)	EMPLOYER = 1 EMPLOYEE = 2 SELF-EMP = 3 UNEMPLOY = 4 HOUSEWIFE = 5 STUDENT = 6 (9)	15-49 SLEPT HERE LAST NIGHT (10)
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

IF CONTINUATION SHEET USED, CHECK  
HERE:

1. Is there anybody else, such as babies or servants or lodgers, that I have not listed?

YES .. 1 (ADD TO TABLE)  
NO ... 2

2. Do you have any visitors staying with you that I did not list?

YES .. 1 (ADD TO TABLE)  
NO ... 2



REPUBLIC OF LIBERIA  
 MINISTRY OF PLANNING AND ECONOMIC AFFAIRS  
 1986 DEMOGRAPHIC AND HEALTH SURVEY

INDIVIDUAL QUESTIONNAIRE

IDENTIFICATION	
COUNTY .....	□ □
DISTRICT .....	□ □
TOWN/VILLAGE _____	
EA No. _____	
CLUSTER NUMBER .....	□ □ □ □
STRUCTURE NUMBER _____	
HOUSEHOLD NUMBER .....	□ □ □ □
LINE NUMBER OF WOMAN .....	□ □
NAME OF WOMAN _____	

INTERVIEWER VISITS				FINAL VISIT	
	1	2	3		
DATE				MONTH	□ □
				YEAR	□ □
INTERVIEWER NAME				INTERV	□ □ □
RESULT*				RESULT	□ □
DATE: NEXT VISIT TIME:				NO. OF VISITS	
* RESULT CODES: 1 COMPLETED 2 NOT AT HOME 3 DEFERRED 4 REFUSED 5 PARTLY COMPLETED 6 OTHER (SPECIFY)				□ □	

## SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
100	RECORD NUMBER OF PEOPLE LISTED IN THE HOUSEHOLD SCHEDULE	NUMBER OF PEOPLE <input type="text"/>	
101	RECORD THE TIME	HOUR ..... <input type="text"/> MINUTES ..... <input type="text"/>	
102	For most of the time, when you were a young girl, did you live in a village, in a town, in Monrovia, or in another city?	VILLAGE ..... 1 TOWN ..... 2 MONROVIA ..... 3 ANOTHER CITY ..... 4	
103	In what month and year were you born?	MONTH ..... <input type="text"/> DK MONTH ..... 98 YEAR ..... <input type="text"/> DK YEAR ..... 98	
104	How old are you? COMPARE AND CORRECT 103 AND/OR 104 IF INCONSISTENT.	AGE IN COMPLETED YEARS ..... <input type="text"/>	
105	Can you read a letter or newspaper easily, with difficulty or not at all?	EASILY ..... 1 WITH DIFFICULTY ..... 2 NOT AT ALL ..... 3	
106	Have you ever attended school?	YES ..... 1 NO ..... 2--	→111
107	What was the highest level of school you attended: primary, secondary, vocational, or higher?	PRIMARY ..... 1 SECONDARY ..... 2 VOCATIONAL ..... 3 HIGHER ..... 4	
108	What was the last grade you completed at that level?	GRADE ..... <input type="text"/>	
111	Do you listen to a radio at least once a week?	YES ..... 1 NO ..... 2	
112	Where is the main place people in this house get drinking water in the dry season?	PIPED INTO HOUSE ..... 1 OUTSIDE PIPE ..... 2 WELL WITH COVER ..... 3 WELL WITHOUT COVER ..... 4 RIVER OR STREAM ..... 5 RAINWATER ..... 6 OTHER ..... 7 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO																		
113	What do people in this house use for toilet?	FLUSH ..... 1 OUTSIDE TOILET(PUBLIC) 2 OUTSIDE TOILET(PRIVATE) 3 BUSH, NO FACILITIES ... 4 OTHER ..... 5 (SPECIFY)																			
114	In this house do you have: A table with chairs? A bed with mattress? A radio? An icebox?	<table border="0"> <thead> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>TABLE WITH CHAIRS</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>BED WITH MATTRESS</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>RADIO .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ICEBOX .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	TABLE WITH CHAIRS	1	2	BED WITH MATTRESS	1	2	RADIO .....	1	2	ICEBOX .....	1	2				
	YES	NO																			
TABLE WITH CHAIRS	1	2																			
BED WITH MATTRESS	1	2																			
RADIO .....	1	2																			
ICEBOX .....	1	2																			
121	Which religion (church) do you belong to?	PROTESTANT ..... 1 CATHOLIC ..... 2 MUSLIM ..... 3 TRADITIONAL ..... 4 NONE ..... 5 OTHER ..... 6 (SPECIFY)																			
122	What is your tribe?	<table border="0"> <tbody> <tr> <td>BASSA . 1</td> <td>KRAHN .... 10</td> </tr> <tr> <td>BELLE . 2</td> <td>KRU/SAPO . 11</td> </tr> <tr> <td>DEY ... 3</td> <td>LORMA .... 12</td> </tr> <tr> <td>GBANDI 4</td> <td>MANDINGO . 13</td> </tr> <tr> <td>GIO ... 5</td> <td>MANO ..... 14</td> </tr> <tr> <td>GOLA .. 6</td> <td>MENDE .... 15</td> </tr> <tr> <td>GREBO . 7</td> <td>VAI ..... 16</td> </tr> <tr> <td>KISSI . 8</td> <td>NONE ..... 17</td> </tr> <tr> <td>KPELLE 9</td> <td>OTHER .... 18</td> </tr> </tbody> </table>	BASSA . 1	KRAHN .... 10	BELLE . 2	KRU/SAPO . 11	DEY ... 3	LORMA .... 12	GBANDI 4	MANDINGO . 13	GIO ... 5	MANO ..... 14	GOLA .. 6	MENDE .... 15	GREBO . 7	VAI ..... 16	KISSI . 8	NONE ..... 17	KPELLE 9	OTHER .... 18	
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GREBO . 7	VAI ..... 16																				
KISSI . 8	NONE ..... 17																				
KPELLE 9	OTHER .... 18																				
123	MAIN MATERIAL OF THE ROOF?	THATCH, GRASS ..... 1 ZINC, METAL ..... 2 CONCRETE ..... 3 ASPHALT, ASBESTOS ..... 4 OTHER ..... 5 (SPECIFY)																			

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO								
201	Now I would like to ask about all the children that you born including the ones that are not living. Have you ever born any children?	YES ..... 1 NO ..... 2--	→206								
202	Do you have any son or daughter you born who is living with you now?	YES ..... 1 NO ..... 2--	→204								
203	How many sons live with you? And how many daughters live with you? IF NONE ENTER 00.	SONS AT HOME .... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table> DAUGHTERS AT HOME <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>									
204	Do you have any son or daughter you born who is not living with you?	YES ..... 1 NO ..... 2--	→206								
205	How many sons do not live with you? And how many daughters do not live with you? IF NONE ENTER 00.	SONS ELSEWHERE ... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table> DAUGHTERS ELSEWHERE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>									
206	Have you ever born a boy or a girl who was born alive but later died? PROBE: Any boy or girl who when he was born was crying but died later on?	YES ..... 1 NO ..... 2--	→208								
207	How many boys have died? And how many girls have died? IF NONE ENTER 00.	BOYS DEAD ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table> GIRLS DEAD ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>									
208	SUM ANSWERS TO 203, 205, AND 207 AND ENTER TOTAL.	TOTAL ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>									
209	Just to make sure that I have this right, you have had (TOTAL) live births during your life. Is that correct? YES ..... 1 NO ..... 2 (PROBE AND CORRECT AS NECESSARY)										
210	CHECK 208: NO BIRTHS ..... 1-- ONE OR MORE BIRTHS ..... 2  Now I want to write the names of all your own births whether they are still living or not. Please start with your first born. (RECORD THE NAMES OF ALL THE BIRTHS IN 211.)		→219								

211 What name was given to your (first, next) baby?  RECORD TWINS ON SEPARATE LINES AND MARK WITH BRACKET	212 Is (NAME) a boy or a girl?	213 Is (NAME) still alive?	IF ALIVE:			IF DEAD:	
			214 In what month and year was (NAME) born?  PROBE: What is his/her birthday? OR: In what season?	215 How old is he/she?  RECORD IN COMPLETED YEARS	216 Is he/she living with you?	217 In what month and year was (NAME) born?	218 How old was (NAME) when he/she died?  RECORD IN DAYS, IF LESS THAN ONE MONTH; IN MONTHS IF LESS THAN TWO YEARS
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____
_____       _____	BOY . 1 GIRL 2	YES . 1 NO .. 2	MONTH _____ YEAR 19____	AGE _____	YES . 1 NO . 2	MONTH _____ YEAR 19____	DAYS _____ MONTHS _____ YEARS _____

218A COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND CHECK:

NUMBERS ARE THE SAME ..... 1  
 NUMBERS ARE DIFFERENT ..... 2 (PROBE AND RECONCILE)

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
219	Did you have your period in the last four weeks?	YES ..... 1-- NO ..... 2	→223
220	Are you pregnant?	YES ..... 1 NO ..... 2-- NOT SURE ..... 8--	→223 →223
221	How many months since you have been pregnant?	MONTHS ..... <input type="text"/>	
222	Since you have been pregnant, were you given any injection to keep the baby from getting tetanus or jerking after he was born? (PROBE: Do you have a health card?)	YES ..... 1 NO ..... 2 DK ..... 8	
223	From the time a woman's period starts to the time the next one starts, when do you think a woman is most likely to get pregnant?	DURING HER PERIOD ..... 1 SOON AFTER HER PERIOD HAS ENDED ..... 2 RIGHT BETWEEN THE TWO PERIODS ..... 3 JUST BEFORE HER PERIOD BEGINS ..... 4 AT ANY TIME ..... 5 OTHER ..... 6 (SPECIFY) DOES NOT KNOW ..... 8	
224	CHECK 214 AND 217: NO BIRTH SINCE JANUARY 1981 ..... 1-- HAD BIRTH SINCE JANUARY 1981 ..... 2	-----	→302
225	Did you ever give (NAME OF LAST CHILD) the breast?	YES ..... 1 NO ..... 2--	→232
226	IF ALIVE: Are you still giving him/her the breast? IF DEAD: CIRCLE CODE 2	YES ..... 1 NO ..... 2--	→232
227	How many times did you give the baby the breast last night, between sundown and sunrise?	NUMBER OF TIMES <input type="text"/> CHILD SLEEPS AT BREAST ..... 88	
228	How many times did you give the baby the breast yesterday during the daylight hours?	NUMBER OF TIMES <input type="text"/> AS OFTEN AS CHILD WANTED.....88	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO																											
229	At any time yesterday or last night, was (NAME OF LAST BIRTH) given any of the following?  READ OUT CODING CATEGORIES	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>PLAIN WATER .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>RICE WATER .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>JUICE .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>POWDERED MILK ....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>COWS MILK .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ANY OTHER LIQUID .</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ANY SOLID OR MUSHY</td> <td></td> <td></td> </tr> <tr> <td>FOOD .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	PLAIN WATER .....	1	2	RICE WATER .....	1	2	JUICE .....	1	2	POWDERED MILK ....	1	2	COWS MILK .....	1	2	ANY OTHER LIQUID .	1	2	ANY SOLID OR MUSHY			FOOD .....	1	2	
	YES	NO																												
PLAIN WATER .....	1	2																												
RICE WATER .....	1	2																												
JUICE .....	1	2																												
POWDERED MILK ....	1	2																												
COWS MILK .....	1	2																												
ANY OTHER LIQUID .	1	2																												
ANY SOLID OR MUSHY																														
FOOD .....	1	2																												
230	CHECK 229: NO FOODS OR LIQUIDS GIVEN ..... 1-- WAS GIVEN FOODS OR LIQUIDS ..... 2		→ 232																											
231	Were any of these given in a bottle with a nipple?	YES ..... 1 NO ..... 2																												
232	When you were pregnant with (NAME OF LAST BIRTH), were you given any injection to keep the baby from getting tetanus or jerking after he was born?	YES ..... 1 NO ..... 2 DK ..... 8																												
233	When you were pregnant with (NAME OF LAST BIRTH), did you see anyone for a check on that pregnancy?	YES ..... 1 NO ..... 2--	→ 234A																											
234	Who did you see?  PROBE FOR TYPE OF PERSON AND RECORD MOST QUALIFIED	DOCTOR ..... 1 TRAINED NURSE/MIDWIFE . 2 TRADITIONAL BIRTH ATTENDANT ..... 3 OTHER ..... 4 (SPECIFY)																												
234A	Where was (NAME OF LAST BIRTH) born?	AT HOME ..... 1 HOSPITAL OR CLINIC .... 2 OTHER ..... 3 (SPECIFY)																												
235	Who helped you deliver (NAME OF LAST BIRTH)?  PROBE FOR TYPE OF PERSON AND RECORD THE MOST QUALIFIED	DOCTOR ..... 1 NURSE OR MIDWIFE ..... 2 TRADITIONAL BIRTH ATTENDANT ..... 3 RELATIVE ..... 4 OTHER ..... 5 (SPECIFY) NO ONE ..... 6																												
236	Have your periods come back since the birth of this child?	YES (OR PREGNANT) ..... 1 NO ..... 2																												
237	Have you started men business since (NAME OF LAST BIRTH) was born?	YES (OR PREGNANT) ..... 1 NO ..... 2																												
238	Before you got pregnant with (NAME OF LAST BIRTH), did you want to have more children?	YES ..... 1 NO ..... 2-- DK ..... 8	→ 302																											
239	Were you glad that you were pregnant then, or did you prefer to wait?	GLAD ..... 1 PREFERRED TO WAIT..... 2 DK ..... 8																												

SECTION 3. CONTRACEPTION

302 Here we will talk about something different. There are many ways that a man or woman can keep a woman from getting pregnant. Which of these ways do you know or have you heard about?

CIRCLE CODE 1 IN 303 FOR EACH METHOD MENTIONED SPONTANEOUSLY. FOR EACH METHOD NOT MENTIONED, READ THE NAME AND THE DESCRIPTION, ASK 303 AND CIRCLE CODE 2 IF METHOD IS RECOGNIZED. THEN ASK 304-305 FOR EACH METHOD AS APPROPRIATE.

METHOD	303 Have you ever heard of this method?	304 Have you ever used (METHOD)?	305 Do you know of a place or a person where you can get (METHOD)?
PILL 'Women can take a special kind of tablet every day to keep her from getting pregnant'	YES, SPONT 1 YES, PROBED 2 NO ..... 3	YES ... 1 NO .... 2	YES ..... 1 NO ..... 2
IUD 'Women can let a doctor put a loop or coil inside them'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES .. 1 NO ... 2	YES ..... 1 NO ..... 2
INJECTIONS 'Women can take special injection which stops her from becoming pregnant for several months'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES....1 NO....2	YES.....1 NO.....2
DIAPHRAGM, FOAM, JELLY 'Women can place some grease or jelly inside them before they go with a man'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES....1 NO....2	YES.....1 NO.....2
CONDOM, RAINCOAT 'Men can use some kind of rubber when he goes with a woman'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES....1 NO....2	YES.....1 NO.....2
FEMALE STERILIZATION 'When a doctor work on a women so she will never have children again'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES....1 NO....2	YES.....1 NO.....2
MALE STERILIZATION 'When a doctor work on a man so he will never have children again'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES....1 NO....2	YES.....1 NO.....2
RHYTHM, SAFE PERIOD 'A man and a woman do not go together on certain days of the month when the woman can get pregnant'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES .. 1 NO .... 2	Do you know of a place or person where you can get advice about this method?  YES ..... 1 NO ..... 2
WITHDRAWAL 'If a man is going with a woman, he takes his thing out before he discharges'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES .. 1 NO ... 2	
ANY OTHER METHODS? 'Do you hear about any other way to keep a woman from getting pregnant? SPECIFY ( )'	YES, SPONT. 1 YES, PROBED 2 NO ..... 3	YES .. 1 NO ... 2	

308 NOT A SINGLE "YES" IN 304 (NEVER USED) ..... 1 (SKIP TO 334)  
AT LEAST ONE "YES" IN 304 (EVER USED) ..... 2



NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
309	CHECK 304:  EVER USED RHYTHM OR SAFE PERIOD ... 1 NEVER USED RHYTHM OR SAFE PERIOD .. 2-		→ 311
310	When you were using the rhythm method or the safe period, how did you know which days you had to keep from going with your man?	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	CHECK 220:  PREGNANT ..... 1- NOT PREGNANT, NOT SURE ..... 2		→ 334
313	Are you doing something now or using any method to keep you from getting pregnant?	YES ..... 1 NO ..... 2--	→ 334
314	Which method are you using now?	PILL ..... 01 IUD ..... 02 INJECTIONS ..... 03 DIAPHRAGM, FOAM, JELLY . 04 CONDOM, RAINCOAT ..... 05 FEMALE STERILIZATION . 06 MALE STERILIZATION ... 07 PERIODIC ABSTINENCE .. 08 WITHDRAWAL ..... 09-- OTHER ..... 10-- (SPECIFY)	→ 401 → 401
315	Where did you get (METHOD) from, the last time?  IF RHYTHM OR SAFE PERIOD, ASK: Where did you get advice about this method?	GOVERNMENT HOSPITAL OR HEALTH CLINIC ..... 1 CHURCH HOSPITAL OR CLINIC ..... 2 FPAL CLINIC ..... 3 PRIVATE DOCTOR/CLINIC . 4 PHARMACY/SHOP ..... 5 FIELD WORKER ..... 6 OTHER ..... 7 (SPECIFY) DK ..... 8	→ 401
334	Do you think that you will do something to keep you from getting pregnant at any time in the future?	YES ..... 1 NO ..... 2-- DK ..... 8--	→ 337 → 337

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
335	Which method do you think you will use?	PILL ..... 01 IUD ..... 02 INJECTIONS ..... 03 DIAPHRAGM, FOAM, JELLY 04 CONDOM ..... 05 FEMALE STERILIZATION . 06 MALE STERILIZATION ... 07 RHYTHM, SAFE PERIOD .. 08 WITHDRAWAL ..... 09— OTHER ..... 10— (SPECIFY) UNSURE.....12—	        → 337 → 337 → 337
336	Where or who will you go to get this method or to tell you about it?	GOVERNMENT HOSPITAL OR HEALTH CLINIC ..... 1 CHURCH HOSPITAL OR HEALTH CLINIC ..... 2 FPAL CLINIC ..... 3 PRIVATE DOCTOR/CLINIC . 4 PHARMACY/SHOP ..... 5 FIELD WORKER ..... 6 OTHER ..... 7 (SPECIFY) DOESN'T KNOW ..... 8	
337	Do you like for people to do anything to keep a woman from getting pregnant?	LIKES ..... 1 DOESN'T LIKE ..... 2 DOESN'T KNOW/DEPENDS .. 8	

SECTION 4. HEALTH OF CHILDREN

401 CHECK 214 AND 217: NO BIRTH SINCE JAN. 1981 ..... 1 (SKIP TO SECTION 5)  
 HAD BIRTH SINCE JAN. 1981 ..... 2

ENTER NAME AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1981. BEGIN WITH LAST BIRTH.  
 ASK QUESTIONS ONLY ABOUT LIVING CHILDREN.

	LAST BIRTH	NEXT-TO-LAST BIRTH	PRECEDING BIRTH	PRECEDING BIRTH
	NAME _____	NAME _____	NAME _____	NAME _____
	ALIVE [ ] DEAD [ ] →	ALIVE [ ] DEAD [ ] →	ALIVE [ ] DEAD [ ] →	ALIVE [ ] DEAD [ ] →
402 Do you have a vaccination card for (NAME)? IF YES: May I see it please?	YES, SEEN ..... 1_   YES, NOT SEEN .. 2   (SKIP TO 404) ←   NO CARD ..... 3_	YES, SEEN ..... 1_   YES, NOT SEEN .. 2   (SKIP TO 404) ←   NO CARD ..... 3_	YES, SEEN ..... 1_   YES, NOT SEEN .. 2   (SKIP TO 404) ←   NO CARD ..... 3_	YES, SEEN ..... 1_   YES, NOT SEEN .. 2   (SKIP TO 404) ←   NO CARD ..... 3_
403 RECORD DATES FROM HEALTH CARD:	NO MO DA YR	NO MO DA YR	NO MO DA YR	NO MO DA YR
BCG:	1	1	1	1
WHOOPING COUGH, 1:	1	1	1	1
TETANUS, DIPHTHE- 2:	1	1	1	1
RIA INNOCULATION 3:	1	1	1	1
POLIO 1:	1	1	1	1
POLIO 2:	1	1	1	1
POLIO 3:	1	1	1	1
MEASLES:	1	1	1	1
	(SKIP TO 405)	(SKIP TO 405)	(SKIP TO 405)	(SKIP TO 405)
404 Has (NAME) ever had a vaccination to prevent him/her from getting diseases?	YES ..... 1   NO ..... 2   DK ..... 8	YES ..... 1   NO ..... 2   DK ..... 8	YES ..... 1   NO ..... 2   DK ..... 8	YES ..... 1   NO ..... 2   DK ..... 8
405 Has (NAME) had running stomach in the last four weeks?	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (SKIP TO 408) ←   DK ..... 8_
406 Did you or anybody else do something to treat the running stomach?	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (GO TO NEXT BIRTH) ←   DK ..... 8_	YES ..... 1_   NO ..... 2   (SKIP TO 408) ←   DK ..... 8_
407 What was the treatment? CIRCLE CODE 1 FOR ALL MENTIONED.	COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS* ..... 1   ORAL REHYDRATION PACKET ..... 1   HOMEMADE DRINK OF SUGAR, SALT AND WATER ..... 1   OTHER ..... 1   (GO TO NEXT BIRTH)	COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS* ..... 1   ORAL REHYDRATION PACKET ..... 1   HOMEMADE DRINK OF SUGAR, SALT AND WATER ..... 1   OTHER ..... 1   (GO TO NEXT BIRTH)	COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS* ..... 1   ORAL REHYDRATION PACKET ..... 1   HOMEMADE DRINK OF SUGAR, SALT AND WATER ..... 1   OTHER ..... 1   (GO TO NEXT BIRTH)	COUNTRY MEDICINE HERBS ..... 1   ANTIBIOTICS* ..... 1   ORAL REHYDRATION PACKET ..... 1   HOMEMADE DRINK OF SUGAR, SALT AND WATER ..... 1   OTHER ..... 1   (GO TO 408)

\* Antibiotics include: Ampicillin, Amoxicillin, Erythromycin, Gantrocin, Penicillin, Tetracycline, and Terramycin.

ENTER NAME AND SURVIVAL STATUS OF EACH BIRTH SINCE JANUARY 1981. ASK QUESTIONS ONLY ABOUT LIVING CHILDREN.

	LAST BIRTH NAME _____ ALIVE [ ] DEAD [ ]	NEXT-TO-LAST BIRTH NAME _____ ALIVE [ ] DEAD [ ]	PRECEDING BIRTH NAME _____ ALIVE [ ] DEAD [ ]	PRECEDING BIRTH NAME _____ ALIVE [ ] DEAD [ ]
408 Has (NAME) had fever in the last four weeks?	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_
409 Did you or anybody else do something to treat the fever?	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 411) ←   DK ..... 8_
410 What was done? CIRCLE CODE 1 FOR ALL MENTIONED	ANTIMALARIAL# .. 1   COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS .... 1   OTHER ..... 1	ANTIMALARIAL# .. 1   COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS .... 1   OTHER ..... 1	ANTIMALARIAL# .. 1   COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS .... 1   OTHER ..... 1	ANTIMALARIAL# .. 1   COUNTRY MEDICINE, HERBS ..... 1   ANTIBIOTICS .... 1   OTHER ..... 1
411 Has (NAME) suffered from coughing or difficult breathing in the last four weeks?	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_
412 Did you or anybody else do something to treat the problem?	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_	YES ..... 1_   NO ..... 2_   (SKIP TO 414) ←   DK ..... 8_
413 What was done? CIRCLE CODE 1 FOR ALL MENTIONED.	COUGH SYRUP .... 1   ANTIBIOTICS* ... 1   COUNTRY MEDICINE, HERBS ..... 1   TREATED IN HOSPITAL ..... 1   OTHER ..... 1	COUGH SYRUP .... 1   ANTIBIOTICS* ... 1   COUNTRY MEDICINE, HERBS ..... 1   TREATED IN HOSPITAL ..... 1   OTHER ..... 1	COUGH SYRUP .... 1   ANTIBIOTICS* ... 1   COUNTRY MEDICINE, HERBS ..... 1   TREATED IN HOSPITAL ..... 1   OTHER ..... 1	COUGH SYRUP .... 1   ANTIBIOTICS* ... 1   COUNTRY MEDICINE, HERBS ..... 1   TREATED IN HOSPITAL ..... 1   OTHER ..... 1
414 Has (NAME) ever had measles?	YES ..... 1   NO ..... 2   DK ..... 3   (GO TO NEXT BIRTH)	YES ..... 1   NO ..... 2   DK ..... 3   (GO TO NEXT BIRTH)	YES ..... 1   NO ..... 2   DK ..... 3   (GO TO NEXT BIRTH)	YES ..... 1   NO ..... 2   DK ..... 3   (GO TO 501)

# Antimalarials include: Any form of chloroquine, any other tablet to prevent malaria.

\* Antibiotics include: Ampicillin, Amoxicillin, Erythromycin, Gantrocin, Penicillin, Tetracycline, and Terramycin.

SECTION 5. MARRIAGE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
501	Have you ever been married or lived with a man?	YES ..... 1 NO ..... 2	→ 508
503	Are you now married, or living with a man, or are you widowed, divorced or no longer living together?	MARRIED ..... 1 LIVING TOGETHER ..... 2 WIDOWED ..... 3 DIVORCED ..... 4 NOT LIVING TOGETHER ... 5	→ 506
504	Does your man/husband have any other wife?	YES ..... 1 NO ..... 2	
506	Have you lived with only one man or more than one?	ONE ..... 1 MORE THAN ONE ..... 2	
507	In what month and year did you start living with your (first) man?	MONTH ..... <input type="text"/> DK MONTH ..... 98 YEAR ..... <input type="text"/> DK YEAR ..... 98	→ 510
507A	How old were you when you started living with him?	AGE ..... <input type="text"/>	→ 510
508	Have you ever done men business?	YES ..... 1 NO ..... 2	→ 518
510	Now it is important to ask you some questions about men business. How old were you when you first did men business?	AGE ..... <input type="text"/>	
511	When was the last time you did men business?	DAYS AGO ..... <input type="text"/> WEEKS AGO ..... <input type="text"/> MONTHS AGO ..... <input type="text"/> BEFORE LAST BIRTH .... 88	
512	CHECK 220: PREGNANT ..... 1 NOT PREGNANT/UNSURE ..... 2		→ 518
513	CHECK 314: SOME METHOD CIRCLED (USING) ..... 1 NO METHOD CIRCLED (NOT USING) ... 2		→ 518
514	Would you be upset if you became pregnant in the next few weeks?	YES ..... 1 NO ..... 2	→ 518

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO															
515	What is the main reason that you are not using a method to avoid pregnancy?	PARTNER OBJECTS ..... 01 TOO COSTLY ..... 02 MENOPAUSE/SUBFECOND .. 03 DOESN'T KNOW METHODS . 04 DIFFICULT TO GET ..... 05 INFREQUENT SEX ..... 06 RELIGION ..... 07 BREASTFEEDING ..... 08 FEAR OF SIDE EFFECTS . 09 OPPOSED TO FAMILY PLAN 10 OTHER ..... 11 (SPECIFY)	→ 517      → 518															
516	Why does he object?	WANTS MORE CHILDREN ... 1 FEAR OF SIDE EFFECTS .. 2 FEAR OF WOMAN BEING UNFAITHFUL ..... 3 RELIGION ..... 4 DOESN'T KNOW ..... 8 OTHER ..... 5 (SPECIFY)	→ 518															
517	How much do you think it would cost?	\$ [ ] [ ] . [ ] [ ]																
518	PRESENCE OF OTHERS AT THIS POINT	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>CHILDREN UNDER 10</td> <td>1</td> <td>2</td> </tr> <tr> <td>HUSBAND .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER MALES .....</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER FEMALES ....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	CHILDREN UNDER 10	1	2	HUSBAND .....	1	2	OTHER MALES .....	1	2	OTHER FEMALES ....	1	2	
	YES	NO																
CHILDREN UNDER 10	1	2																
HUSBAND .....	1	2																
OTHER MALES .....	1	2																
OTHER FEMALES ....	1	2																

SECTION 6. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
602	SEE 503 AND CHECK: CURRENTLY MARRIED OR LIVING TOGETHER ..... 1 ALL OTHERS ..... 2		→613
603	I now have some questions about the future. CHECK 220:  NOT PREGNANT <input type="checkbox"/> : Would you like to have another child some day or would you like not to have any more children?  PREGNANT <input type="checkbox"/> : After the child you are expecting, would you like to have another child some day or would you like not to have any more?	HAVE ANOTHER ..... 1 NO MORE ..... 2-- UNDECIDED OR DK ..... 8--	→ 608 → 608
606	How long would you like to wait before you have a (another) child?	MONTHS ..... <input type="text"/> <input type="text"/> YEARS ..... <input type="text"/> <input type="text"/> DOESN'T KNOW ..... 98	→ 608 → 608
607	How old would your youngest child be?	YEARS ..... <input type="text"/> <input type="text"/> DOESN'T KNOW ..... 98	
608	How long do you think a woman should wait after having one child before she should have the next one?	YEARS ..... <input type="text"/> <input type="text"/> OTHER _____ (SPECIFY)	
609	After a woman just had a baby, how long should she wait before starting men business?	MONTHS ..... <input type="text"/> <input type="text"/> OTHER _____ (SPECIFY)	
610	Is it all right for a mother to do men business when she is still giving her baby the breast?	YES ..... 1 NO ..... 2	
611	Do you think that your man will like for people to do something to keep a woman from getting pregnant?	LIKES ..... 1 DOESN'T LIKE ..... 2 DOESN'T KNOW ..... 8	
612	How often have you talked to your man about this subject in the past year?	NEVER ..... 1 ONCE OR TWICE ..... 2 MORE OFTEN ..... 3	
613	CHECK 210: NO CHILDREN [ ]: If you could choose the number of children to have in your whole life, how many would that be?  HAS CHILDREN [ ]: If you could go back to the time when you didn't have any children, and if you could choose the number of children to have in your whole life, how many would that be? RECORD SINGLE NUMBER, RANGE OR OTHER ANSWER	NUMBER ..... <input type="text"/> <input type="text"/>  RANGE: BETWEEN _____ AND _____ OTHER ANSWER _____ (SPECIFY)	
614	What type of woman do you think a man would prefer to marry: a woman who has given birth or a woman who has never given birth?	WOMAN WHO HAS GIVEN BIRTH ..... 1 WOMAN WHO HAS NOT GIVEN BIRTH ..... 2 DOESN'T KNOW ..... 8	

SECTION 7. HUSBAND'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO																								
701	SEE 501 AND CHECK: EVER MARRIED OR LIVED WITH A MAN ..... 1 ALL OTHERS ..... 2—  ASK QUESTIONS ABOUT CURRENT OR MOST RECENT HUSBAND/PARTNER.		→ 706																								
702	Can (could) your man (husband) read a letter or newspaper easily, with difficulty, or not at all?	EASILY ..... 1 WITH DIFFICULTY ..... 2 NOT AT ALL ..... 3 DOESN'T KNOW ..... 8																									
703	Did he ever attend school?	YES ..... 1 NO ..... 2— DOESN'T KNOW ..... 8—	→ 706 → 706																								
704	What was the highest level of school he attended: Primary, secondary, vocational or higher?	PRIMARY ..... 1 SECONDARY ..... 2 VOCATIONAL ..... 3 HIGHER ..... 4 DK ..... 8—	→ 706																								
705	What was the last grade he completed?	GRADE ..... <input type="text"/> DK ..... 98																									
706	In the past four weeks, did you buy:  READ OUT CODING CATEGORIES	<table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>SALT .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>SOAP .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TOOTHPASTE .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ASPIRIN .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CANNED FISH .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>FACE POWDER .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CHLOROQUINE .....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	SALT .....	1	2	SOAP .....	1	2	TOOTHPASTE .....	1	2	ASPIRIN .....	1	2	CANNED FISH .....	1	2	FACE POWDER .....	1	2	CHLOROQUINE .....	1	2	
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CHLOROQUINE .....	1	2																									



SECTION 8. EXTRA HEALTH QUESTIONS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO				
801	What can cause running stomach? CIRCLE CODE 1 FOR ALL MENTIONED	PLENTY FOOD ..... 1 DRINKING DIRTY WATER .. 1 EATING BAD FOOD ..... 1 SORE IN STOMACH ..... 1 OTHER ..... 1					
802	Where is the nearest health clinic?	KNOWS OF A PLACE ..... 1 DOESN'T KNOW ..... 8--	→ 808				
803	How long does it take to get there?	HOURS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table> MINUTES ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table>					
804	In the past year have you been to this clinic for treatment?	YES ..... 1 NO ..... 2--	→ 806				
805	What was the treatment for? IF MORE THAN ONE VISIT, ASK ABOUT MOST RECENT VISIT.	FEVER ..... 1 COUGH ..... 2 RUNNING STOMACH ..... 3 ACCIDENT ..... 4 PREGNANCY, CHILDBIRTH . 5 VACCINATION ..... 6 OTHER ..... 7					
806	Why didn't you go?	TOO COSTLY, NO MONEY .. 1 WENT TO PHARMACY ..... 2-- NOT SICK ..... 3-- OTHER ..... 4--	→ 808 → 808 → 808				
807	How much do you think it would cost to get treatment there?	\$ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr></table>					
808	Where is the nearest medicine store?	KNOWS ..... 1 DOESN'T KNOW ..... 8--	→ 813				
809	How long does it take to get there?	HOURS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table> MINUTES ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table>					
810	In the past year, did you buy any medicines there?	YES ..... 1 NO ..... 2--	→ 812				
811	What kind of medicine did you buy? CIRCLE ONLY ONE	ANTIBIOTICS ..... 1 COUGH MEDICINE ..... 2 OTHER ..... 3					
812	Can you take injection at this store?	YES ..... 1 NO ..... 2 DOESN'T KNOW ..... 8					
813	(IF VILLAGE) is there a Village Development Council in this village?	YES ..... 1 NO ..... 2 DOESN'T KNOW ..... 8					
814	(IF VILLAGE) is there a village health worker in this village?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8					
815	RECORD THE TIME	HOOR ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table> MINUTES ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr></table>					

SECTION 9.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES																		
901	WHAT IS THE RESPONDENT'S NATIVE LANGUAGE?	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">BASSA .... 1</td> <td style="width: 50%;">KRAHN ..... 10</td> </tr> <tr> <td>BELLE .... 2</td> <td>KRU/SAPO .... 11</td> </tr> <tr> <td>DEY ..... 3</td> <td>LORMA ..... 12</td> </tr> <tr> <td>GBANDI ... 4</td> <td>MANDINGO .... 13</td> </tr> <tr> <td>GIO ..... 5</td> <td>MANO ..... 14</td> </tr> <tr> <td>GOLA ..... 6</td> <td>MENDE ..... 15</td> </tr> <tr> <td>GREBO .... 7</td> <td>VAI ..... 16</td> </tr> <tr> <td>KISSI .... 8</td> <td>ENGLISH ..... 17</td> </tr> <tr> <td>KPELLE ... 9</td> <td>OTHER ..... 18</td> </tr> </table>	BASSA .... 1	KRAHN ..... 10	BELLE .... 2	KRU/SAPO .... 11	DEY ..... 3	LORMA ..... 12	GBANDI ... 4	MANDINGO .... 13	GIO ..... 5	MANO ..... 14	GOLA ..... 6	MENDE ..... 15	GREBO .... 7	VAI ..... 16	KISSI .... 8	ENGLISH ..... 17	KPELLE ... 9	OTHER ..... 18
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902	IN WHAT LANGUAGE DID YOU CONDUCT THE INTERVIEW?	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">BASSA .... 1</td> <td style="width: 50%;">KRAHN ..... 10</td> </tr> <tr> <td>BELLE .... 2</td> <td>KRU/SAPO .... 11</td> </tr> <tr> <td>DEY ..... 3</td> <td>LORMA ..... 12</td> </tr> <tr> <td>GBANDI ... 4</td> <td>MANDINGO .... 13</td> </tr> <tr> <td>GIO ..... 5</td> <td>MANO ..... 14</td> </tr> <tr> <td>GOLA ..... 6</td> <td>MENDE ..... 15</td> </tr> <tr> <td>GREBO .... 7</td> <td>VAI ..... 16</td> </tr> <tr> <td>KISSI .... 8</td> <td>ENGLISH ..... 17</td> </tr> <tr> <td>KPELLE ... 9</td> <td>OTHER ..... 18</td> </tr> </table>	BASSA .... 1	KRAHN ..... 10	BELLE .... 2	KRU/SAPO .... 11	DEY ..... 3	LORMA ..... 12	GBANDI ... 4	MANDINGO .... 13	GIO ..... 5	MANO ..... 14	GOLA ..... 6	MENDE ..... 15	GREBO .... 7	VAI ..... 16	KISSI .... 8	ENGLISH ..... 17	KPELLE ... 9	OTHER ..... 18
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903	FOR HOW MUCH OF THE INTERVIEW DID YOU DEPEND ON A THIRD PERSON TO INTERPRET FOR YOU?	<table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">NONE OF THE INTERVIEW .....</td> <td style="width: 20%;">1</td> </tr> <tr> <td>SOME OF THE INTERVIEW .....</td> <td>2</td> </tr> <tr> <td>MOST OF THE INTERVIEW .....</td> <td>3</td> </tr> <tr> <td>ALL OF THE INTERVIEW .....</td> <td>4</td> </tr> </table>	NONE OF THE INTERVIEW .....	1	SOME OF THE INTERVIEW .....	2	MOST OF THE INTERVIEW .....	3	ALL OF THE INTERVIEW .....	4										
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COMMENTS: \_\_\_\_\_

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Republic of Liberia  
Ministry of Planning and Economic Affairs  
Population Division

1984 Census of Population and Housing  
Occupational and Industrial Codes of  
The Working Population in Liberia

January 20, 1984

Ministry of Planning and Economic Affairs  
1984 Population and Housing Census  
Occupational and Industrial Codes Structure

The code structure on occupation and industry for the working population, as given below is obtained from the 1968 Revised Edition of the International Standard Classification as adopted by the International Labor Office, Geneva. Occupation and Industry data obtained from the census are classified using three digit and two digit codes respectively. Sometimes, information on occupation and industry obtained from the field may not be adequate to place them in detailed classifications; in such situation the information can be placed in broader categories.

Occupation has been divided into three levels, major, minor and unit groups. Similarly, for industry, there are two levels major and minor groups.

It can be noted that the definition of occupation covers various jobs or positions held by an individual worker who performs one or more of the different job combinations of the tasks described. Although the 1968 ISCO identified thousands of occupation, however most of the ones relevant to the Liberian society have been enlisted. The following depicts the list of such occupations under each major and minor groups along with their relevant codes.

I Code Structure For Occupational Data

Major Group 0/1: Professional, Technical  
and Related Workers

0-1 Physical Scientists and Related Technicians

- 0-11 Chemists
- 0-12 Physicists
- 0-13 Physical Scientists not elsewhere classified
- 0-14 Physical Science technicians

0-2/0-3 Architects, Engineers and related technicians

- 0-21 Architects and town planners
- 0-22 Civil engineers
- 0-23 Electrical and electronics engineers
- 0-24 Mechanical engineers
- 0-25 Chemical engineers
- 0-27 Mining engineers
- 0-28 Industrial engineers
- 0-29 Engineers not elsewhere classified
- 0-31 Surveyors
- 0-32 Draughtsmen
- 0-33 Civil engineering technicians
- 0-34 Electrical and electronics engineering technicians
- 0-35 Mechanical engineering technicians
- 0-36 Chemical engineering technicians
- 0-38 Mining technicians
- 0-39 Engineering technicians not elsewhere classified

0-4 Aircraft and Ships' Officers

- 0-41 Aircraft pilots, navigators and flight engineers
- 0-42 Ships' deck officers and pilots
- 0-43 Ships' engineers



05 Life Scientists and Related Technicians

- 0-51 Biologists, zoologists and related scientists
- 0-52 Bacteriologists, pharmacologists and related scientists
- 0-53 Agronomists and related scientists
- 0-54 Life sciences technicians

0-6/0-7 Medical, Dental, Veterinary and Related Workers

- 0-61 Medical doctors
- 0-62 Medical assistants
- 0-63 Dentists
- 0-64 Dental assistants
- 0-65 Veterinarians
- 0-66 Veterinary assistants
- 0-67 Pharmacists
- 0-68 Pharmaceutical assistants
- 0-69 Dietitians and public health nutritionists
- 0-71 Professional nurses
- 0-72 Nursing personnel not elsewhere classified
- 0-73 Professional Midwives
- 0-74 Midwifery personnel not elsewhere classified
- 0-75 Optometrists and opticians
- 0-76 Physiotherapists and occupational therapists
- 0-77 Medical X-ray technicians
- 0-79 Medical, dental, veterinary and related workers not elsewhere classified

0-8 Statisticians, Mathematicians, Systems Analysts and Related Technicians

- 0-81 Statisticians
- 0-82 Mathematicians and actuaries
- 0-83 Systems analysts
- 0-84 Statistical and mathematical technicians

- 0-9 Economists
- 0-90 Economists
- 1-1 Accountants
- 1-10 Accounts
- 1-2 Jurists
- 1-21 Lawyers
- 1-22 Judges
- 1-29 Jurists not elsewhere classified
- 1-3 Teachers
- 1-31 University and higher education teachers
- 1-32 Secondary education teachers
- 1-33 Primary education teachers
- 1-34 Pre-primary education teachers
- 1-35 Special education teachers
- 1-39 Teachers not elsewhere classified
- 1-4 Workers in Religion
- 1-41 Ministers of religion and related members of religious orders
- 1-49 Workers in religion not elsewhere classified
- 1-5 Authors, Journalists and Related Writers
- 1-51 Authors and Critics
- 1-59 Authors, journalists and related writers not elsewhere classified
- 1-6 Sculptors, Painters, Photographers and Related Creative Artists
- 1-61 Sculptors, painters and related artists
- 1-62 Commercial artists and designers
- 1-63 Photographers and cameramen

7-1 Composers and Performing Artists

- 1-71 Composers, musicians and singers
- 1-72 Choreographers and dancers
- 1-73 Actors and stage directors
- 1-74 Producers, performing arts
- 1-75 Circus performers
- 1-79 Performing artists not elsewhere classified

1-8 Athletes, Sportsmen and Related Workers

- 1-80 Athletes, sportsmen and related workers

1-9 Professional, Technical and Related Workers Not Elsewhere Classified

- 1-91 Librarians, archivists and curators
- 1-92 Sociologists, anthropologists and related scientists
- 1-93 Social workers
- 1-94 Personnel and occupational specialists
- 1-95 Philologists, translators and interpreters
- 1-99 Other professional, technical and related workers

Major Group 2: Administrative and Managerial Workers

2-0 Legislative Officials and Government Administrators

- 2-01 Legislative officials
- 2-02 Government administrators - Superintendents of counties

2-1 Managers

- 2-11 General managers
- 2-12 Production managers
- 2-19 Managers not elsewhere classified

Major Group 3: Clerical and Related Workers

- 3-0 Clerical supervisors
  - 3-00 Clerical supervisors
- 3-1 Government Executive Officials
  - 3-10 Government executive officials
- 3-2 Stenographers, Typists and Card and Tape Punching Machine Operators
  - 3-21 Stenographers, typists and teletypists
  - 3-22 Card and tape punching machine operators
- 3-3 Bookkeepers, Cashiers and Related Workers
  - 3-31 Bookkeepers and cashiers
  - 3-39 Bookkeepers, cashiers and related workers not elsewhere classified
- 3-4 Computing Machine Operators
  - 3-41 Bookkeeping and calculating machine operators
  - 3-42 Automatic data-processing machine operators
- 3-5 Transport and Communication Supervisors
  - 3-51 Railway station masters
  - 3-52 Post masters
  - 3-39 Transport and communications supervisors not elsewhere classified
- 3-6 Transport Conductors
  - 3-60 Transport conductors
- 3-7 Mail Distribution Clerks
  - 3-70 Mail distribution clerks
- 3-8 Telephone and Telegraph Operators
  - 3-80 Telephone and telegraph operators

3 8-9 Clerical and Related Workers Not Elsewhere Classified

- 3-91 Stock clerks = Store Clerk
- 3-92 Material and production planning clerks
- 3-93 Correspondence and reporting clerks
- 3-94 Receptionists and travel agency clerks
- 3-95 Library and filing clerks
- 3-99 Clerks not elsewhere classified

Major Group 4: Sales Workers

4-0 Managers (Wholesale and Retail Trade)

- 4-00 Managers (wholesale and retail trade)

4-1 Working Proprietors (Wholesale and Retail trade)

- 4-10 Working proprietors (wholesale and retail trade)

4-2 Sales Supervisors and Buyers

- 4-21 Sales supervisors
- 4-22 Buyers

4-3 Technical Salesmen, Commercial Travellers and Manufacturers' Agents

- 4-31 Technical salesmen and service advisors
- 4-32 Commercial travellers and manufacturers's agents

4-4 Insurance, Real Estate, Securities and Business Services Salesmen and Auctioneers

- 4-41 Insurance, real estate and securities salesmen
- 4-42 Auctioneers

4-5 Salesmen, Shop Assistants and Related Workers

- 4-51 Salesmen, shop assistants and demonstrators - store-boy
- 4-52 Street vendors, canvassers and news vendors

4-9 Sales Workers Not Elsewhere Classified

- 4-90 Sales workers not elsewhere classified

Major Group 5: Service Workers

- 5-0 Managers (Catering and Lodging Services)
  - 5-00 Managers (catering and lodging services)
- 5-1 Working Proprietors (Catering and Lodging Services)
  - 5-10 Working proprietors (catering and lodging services)
- 5-2 Housekeeping and Related Service Supervisors
  - 5-20 Housekeeping and related service supervisors
- 5-3 Cooks, Waiters, Bartenders and Related Workers
  - 5-31 Cooks
  - 5-32 Waiters, bartenders and related workers
- 5-4 Maids and Related Housekeeping Service Workers Not Elsewhere Classified
  - 5-40 Maids and related housekeeping service workers not elsewhere classified
- 5-5 Building Caretakers, Charworkers, Cleaners and Related Workers
  - 5-51 Building caretakers - Janitor
  - 5-52 Charworkers, cleaners and related workers
- 5-6 Launderers, Dry-Cleaners and Pressers
  - 5-60 Launderers, dry-cleaners and pressers
- 5-7 Hairdressers, Barbers, Beauticians and Related Workers
  - 5-70 Hairdressers, barbers, beauticians and related workers
- 5-8 Protective Service Workers
  - 5-81 Fire-fighters
  - 5-82 Policemen and detectives
  - 5-89 Protective service workers not elsewhere classified
- 5-9 Service Workers Not Elsewhere Classified
  - 5-91 Guides
  - 5-92 Undertakers and embalmers
  - 5-99 Other service workers - office boy

Major Group 6: Agricultural, Animal Husbandary and Forestry Workers, Fishermen and Hunters

- 6-0 Farm Managers and Supervisors
  - 6-00 Farm managers and supervisors
- 6-1 Farmers
  - 6-11 General farmers
  - 6-12 Specialised farmers
- 6-2 Agricultural and Animal Husbandary Workers
  - 6-21 General farm workers
  - 6-22 Field crop and vegetable farm workers
  - 6-23 Orchard, vineyard and related tree and shrub crop workers
  - 6-24 Livestock workers
  - 6-25 Dairy farm workers
  - 6-26 Poultry farm workers
  - 6-27 Nusery workers and gardeners
  - 6-28 Farm machinery operators
  - 6-29 Agricultural and animal husbandry workers not elsewhere classified
- 6-3 Forestry Workers
  - 6-31 Loggers
  - 6-32 Forestry Workers (except logging)
- 6-40 Fishermen, Hunters and Related Workers
  - 6-41 Fishermen
  - 6-49 Fishermen, hunters and related workers not elsewhere classified

Major Group 7/8/9: Production and Related Workers, Transport Equipment Operators and Labourers

- 7-0 Production Supervisors and General Foremen
  - 7-00 Production supervisors and general foremen

- 7-1        **Miners, Quarrymen, Well Drillers and Related Workers**
  - 7-11      Mines and quarrymen
  - 7-12      Mineral and stone treaters
  - 7-13      Well drillers, borers and related workers
  
- 7-20      **Metal Processers**
  - 7-21      Metal smelting, converting and refining furnacemen
  - 7-22      Metal rolling-mill workers
  - 7-23      Metal melters and reheaters
  - 7-24      Metal casters
  - 7-25      moulders and coremakers
  - 7-26      Metal annealers, temperers and case-hardeners
  - 7-27      Metal drawers and extruders
  - 7-28      Metal platers and coaters
  - 7-29      Metal processers not elsewhere classified
  
- 7-30      **Wood Preparation Workers and Paper Makers**
  - 7-31      Wood treaters
  - 7-32      Sawyers, plywood makers and related wood-processing workers
  - 7-33      Paper pulp preparers
  - 7-34      Paper makers
  
- 7-4        **Chemical Processers and Related Workers**
  - 7-41      Crushers, grinders and mixers
  - 7-42      Cookers, roasters and related heat-treaters
  - 7-43      Filter and separator operators
  - 7-44      Still and reactor operators
  - 7-45      Petroleum-refining workers
  - 7-49      Chemical processers and related workers not elsewhere classified
  
- 7-5        **Spinners, Weavers, Knitters, Dyers and Related Workers**
  - 7-51      Fibre preparers
  - 7-52      Spinners and winders
  - 7-53      Weaving and knitting-machine setters and pattern-card preparers
  - 7-54      Weavers and related workers
  - 7-55      Knitters
  - 7-56      Bleachers, dyers and textile product finishers
  - 7-59      Spinners, weavers, knitters, dyers and related workers not elsewhere classified.



- 7-6 Tanners, Fellmongers and Pelt Dressers
  - 7-61 Tanners and fellmongers
  - 7-62 Pelt dressers
- 7-7 Food and Beverage Processers
  - 7-71 Grain millers and related workers
  - 7-72 Sugar processers and refiners
  - 7-73 Butchers and meat preparers
  - 7-74 Food preservers
  - 7-75 Dairy product processers
  - 7-76 Bakers, pastry cooks and confectionery makers
  - 7-77 Tea, coffee and cocoa preparers
  - 7-78 Brewers, wine and beverage makers
  - 7-79 Food and beverage processers not elsewhere classified  
Palm Oil producers
- 7-8 Tobacco Preparers and Tobacco Product Makers
  - 7-81 Tobacco preparers
  - 7-82 Cigar makers
  - 7-83 Cigarette makers
  - 7-89 Tobacco preparers and tobacco product makers  
not elsewhere classified
- 7-9 Tailors, Dressmakers, Sewers, Upholsterers and Related Workers
  - 7-91 Tailors and dressmakers
  - 7-92 Fur tailors and related workers
  - 7-93 Milliners and hatmakers
  - 7-94 Patternmakers and cutters
  - 7-95 Sewers and embroiderers
  - 7-96 Upholsterers and related workers
  - 7-99 Tailors, dressmakers, sewers, upholsterers and related  
workers not elsewhere classified
- 8-0 Shoemakers and Leather Goods Maker
  - 8-01 Shoemakers and shoe repairers
  - 8-02 Shoe cutters, lasters, sewers and related workers

- 8-10 Cabinet makers and Related Workers
  - 8-11 Cabinet makers
  - 8-12 Wood Working machine operators
  - 8-19
- 8-2 Stone Cutters and Carvers
  - 8-20 Stone cutters and carvers
- 8-30 Blacksmiths, Tool Makers and Machine-Tool Operapors
  - 8-31 Blacksmiths, hammersmiths and forging-press operators
  - 8-32 Toolmakers, metal patternmakers and metal markers
  - 8-33 Machine-tool setter-operators
  - 8-34 Machine-tool operators
  - 8-35 Metal grinders, polishers and tool sharpeners
  - 8-39 Blacksmiths, toolmakers and machine-tool operators not elsewhere classified
- 8-40 Machinery Fitters, Machine Assemblers and Precision Instrument Makers (except Electrical)
  - 8-41 Machinery fitters and machine assemblers
  - 8-42 Watch, clock and precision instrument makers
  - 8-43 Motor vehicle mechanics
  - 8-44 Aircraft engine mechanic
  - 8-49 Machinery fitters, machine assemblers and precision instrument makers (except electrical) not elsewhere classified
- 8-5 Electrical Fitters and Related Electrical and Electronics Workers
  - 8-51 Electrical fitters
  - 8-52 Electronics fitters
  - 8-53 Electrical and electronic equipment assemblers
  - 8-54 Radio and telecision repairmen
  - 8-55 Electrical wiremen
  - 8-56 Telephone and telegraph installers
  - 8-57 Electric Idnemen and cable jointers
  - 8-59 Electrical fitters and related electrical and electronics workers not elsewhere classified

- 8-6 Broadcasting Station and Sound Equipment Operators and  
cinema Projectionists
  - 8-61 Broadcasting station operators
  - 8-62 Sound equipment operators and cinema projectionists
- 8-7 Plumbers, Welders, Sheet Metal and Structural Metal  
Preparers and Erectors
  - 8-71 Plumbers and pipe fitters
  - 8-72 Welders and flame-cutters
  - 8-73 Sheet-metal workers
  - 8-74 Structural metal preparers and erectors
- 8-8 Jewellery and Precious Metal Workers
  - 8-80 Jewellery and precious metal workers - Gold Smith
- 8-9 Glass Formers, Posters and Related Workers
  - 8-91 Glass formers, cutters, grinders and finishers
  - 8-92 Potters and related clay and abrasive formers
  - 8-93 Glass and ceramics kilnmen
  - 8-94 Glass engravers and etchers
  - 8-95 Glass and ceramics painters and decorators
  - 8-99 Glass formers, potters and related workers not elsewhere  
classified
- 9-0 Rubber and Plastics Product Makers
  - 9-01 Rubber and plastics product makers (except tire makers  
and tire vulcanisers)
  - 9-02 Tire makers and vulcanisers
- 9-1 Paper and Paperboard Products Makers
  - 9-10 Paper and paperboard products makers
- 9-2 Printers and Related Workers
  - 9-21 Compositors and typesetters
  - 9-22 Printing pressmen
  - 9-23 Stereotypers and electrotypers
  - 9-27 Printing engravers (except photo-engravers)
  - 9-25 Photo-engravers
  - 9-26 Bookbinders and related workers
  - 9-28 Photographic darkroom workers
  - 9-29 Printers and related workers not elsewhere classified

- 9-3 Painters
  - 9-31 Painters, construction
  - 9-39 Painters not elsewhere classified
- 9-4 Production and Related Workers Not Elsewhere Classified
  - 9-41 Musical instrument makers and tuners
  - 9-42 Basketry weavers and brush makers
  - 9-43 Non-metallic mineral product makers
  - 9-49 Other production and related workers
- 9-5 Bricklayers, Carpenters and Other Construction Workers
  - 9-51 Bricklayers, stonemasons and tile setters
  - 9-52 Reinforced-concreters, cement finishers and terrazzo workers
  - 9-53 Roofers
  - 9-54 Carpenters, joiners and parquetry workers
  - 9-55 Plasterers
  - 9-56 Insulators
  - 9-57 Glaziers
  - 9-59 Construction workers not elsewhere classified
- 9-6 Stationary Engine and Related Equipment Operators
  - 9-61 Power-generating machinery operators
  - 9-69 Stationary engine and related equipment operators not elsewhere classified
- 9-7 Material-Handling and Related Equipment Operators, Dockers and Freight Handlers
  - 9-71 Dockers and freight handlers
  - 9-72 Riggers and cable splicers
  - 9-73 Crane and hoist operators
  - 9-74 Earth-moving and related machinery operators
  - 9-79 Material-handling equipment operators not elsewhere classified

9-8 Transport Equipment Operators

9-81 Ships' deck ratings, barge crews and boatmen

9-82 Ships' engine-room ratings

9-83 Railway engine drivers and firemen

9-84 Railway brakemen, signalmen and shunters

9-85 Motor vehicle drivers

9-86 Animal and animal-drawn vehicle drivers

9-89 Transport equipment operators not elsewhere classified - *CAT-BOY*

9-9 Labourers Not Elsewhere Classified

9-99 Labourers not elsewhere classified

## 01 BOMI COUNTY

- 01 Clay District
- 02 Mecca District

## 02 BONG COUNTY

- 01 Fuamah District
- 02 Salala District
- 03 Sanoyea District
- 04 Gbarnga District
- 05 Zota District
- 06 Panta-Kpaai Dis.
- 07 Kokoyah District

## 03 GRAND BASSA COUNTY

- 01 District #1
- 02 District #2
- 03 District #3
- 04 District #4
- 05 Commonw. of Buchanan
- 06 St. John River City
- 07 Owensgrove District

## 04 GRAND CAPE MOUNT COUNTY

- 01 Porkpa District
- 02 Gola Konneh District
- 03 Tewor Chiefdom
- 04 Garwula District
- 05 Robertsport Commonw.

## 05 GRAND GEDEH COUNTY

- 01 Gbarzon District
- 02 Tchien District
- 03 Konobo District
- 04 Webbo District
- 05 Gbeapo District

## 06 GRAND KRU COUNTY

- 01 Upper Kru/Barclayville
- 02 Lower Kru Coast/Behwan
- 03 Sastown District
- 04 Buah Statutory District

## 07 LOFA COUNTY

- 01 Guma District
- 02 Kolahun District
- 03 Voinjama District
- 04 Zorzor District
- 05 Belleyalla District
- 06 Gbarma District
- 07 Bopolu District
- 08 Bokomu District

## 08 MARGIBI COUNTY

- 01 Mamba Kaba District
- 02 Kakata District
- 03 Gibi District

## 09 MARYLAND COUNTY

- 02 Barrobo District
- 03 Pleebo/Sodeke District
- 04 Commonwealth of Harper

## 10 MONTSERRADO COUNTY

- 01 Careysburg District
- 02 Todee District
- 03 Greater Monrovia
- 04 Firestone District
- 05 St. Paul River District

## 11 NIMBA COUNTY

- 01 Sanniquellie District
- 02 Gbehlageh District
- 03 Zoegeh District
- 04 Saclepea District
- 05 Yarwien Mehnsoneh
- 06 Tappitta District

## 12 RIVER CESS COUNTY

- 01 Morweh #5B District
- 02 Timbo District

## 14 SINDE COUNTY

- 01 Butaw District
- 02 Juarzon Stat. Dist.
- 03 Pynestown District
- 04 Kpayan District
- 05 Dugbe River District
- 06 Jeadae/Jeadepo District
- 07 Greenville Commonwealth D.

(Codes differ slightly from those in 1984 Census due to geographic changes)