

Liberia



**Demographic and
Health Survey**

2019-20

Key Indicators



Liberia

Demographic and Health Survey 2019-20

Key Indicators Report

Liberia Institute of Statistics and
Geo-Information Services (LISGIS)
Monrovia, Liberia

Ministry of Health and Social Welfare
Monrovia, Liberia

The DHS Program
ICF
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Additional information about the 2019-20 LDHS may be obtained from the Liberia Institute of Statistics and Geo-Information Services (LISGIS), Statistics House, Capitol Hill, P.O. Box 629, Monrovia, Liberia; telephone: +231-886-518885/886-583839; internet: www.lisgis.net.

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FOREWORD

The 2019-20 Liberia Demographic and Health Survey (LDHS) was implemented by the Liberia Institute of Statistics and Geo-Information Services (LISGIS) from October 16, 2019, to February 12, 2020. The Ministry of Health (MOH) authorized the survey. Funding for the survey was provided by the United States Agency for International Development (USAID), the United States Centers for Disease Control and Prevention (CDC), the United Nations Population Fund (UNFPA), UNICEF, the Embassy of Ireland (Irish Aid), the United Nations Development Programme (UNDP), the World Health Organization (WHO), UN Women, and the Global Alliance for Vaccine and Immunization (GAVI). ICF supported the project through The DHS Program, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

The LDHS provides an opportunity to inform policy and provide data for planning, implementation, and monitoring and evaluation of national health programs. It is designed to provide up-to-date information on health indicators including fertility levels, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of children, early childhood and maternal mortality, maternal and child health, awareness and behaviors regarding HIV/AIDS and other sexually transmitted infections, and the prevalence of hepatitis B, hepatitis C, and HIV.

This report presents the preliminary results of the 2019-20 LDHS, which is the fifth in a series of Demographic and Health Surveys conducted in Liberia. Previous surveys were conducted in 1986, 1999/2000, 2007, and 2013.

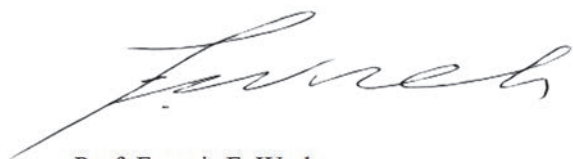
The Liberia Institute of Statistics and Geo-Information Services wishes to express its appreciation to those involved in the implementation of the 2019-20 LDHS through financial and technical support and the preparation of this Key Indicators Report.

Particular thanks go to the following:

- The U.S. Agency for International Development in Liberia, for providing the funding for organizing and conducting the 2019-20 Liberia DHS
- The United Nations Population Fund, Liberia Country Office, for providing additional funds
- The Liberia Institute of Biomedical Research and the National AIDS Control Program, for providing technical support in the implementation of biomarker collection and HIV testing
- ICF, for providing technical support, training of fieldwork staff, consultations, recommendations, and analyses of the data collected

The survey would not have been possible without the good work and dedication of the project staff at various levels. In particular, we wish to express our appreciation to the provincial coordinators, supervisors, interviewers, biomarker technicians, and drivers for their active participation in and contribution to this work.

Above all, we appreciate the assistance of all of the survey respondents nationwide who have made the 2019-20 LDHS a success.



Prof. Francis F. Wreh
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1 INTRODUCTION

The 2019-20 Liberia Demographic and Health Survey (LDHS) is the fifth Demographic and Health Survey to be conducted in Liberia. It was implemented by the Liberia Institute of Statistics and Geo-Information Services (LISGIS) in partnership with the Ministry of Health and Social Welfare. Data collection took place from October 16, 2019, to February 12, 2020. Funding was provided by the United States Agency for International Development (USAID). The United States Centers for Disease Control and Prevention (CDC), the United Nations Population Fund (UNFPA), UNICEF, the Embassy of Ireland (Irish Aid), the United Nations Development Programme (UNDP), the World Health Organization (WHO), UN Women, and the Global Alliance for Vaccine and Immunization (GAVI) provided additional funds for the survey. ICF provided technical assistance through The DHS Program, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

This Key Indicators Report presents preliminary selected findings from the 2019-20 LDHS. A comprehensive analysis of the data will be presented in a final report in early 2021.

1.1 SURVEY OBJECTIVES

The primary objective of the 2019-20 LDHS is to provide up-to-date estimates of key demographic and health indicators necessary for program managers, policymakers, and implementers to monitor and evaluate the impact of existing policies and programs and to design new initiatives for health policies in Liberia.

Specifically, the main objectives of the survey are:

- To collect high-quality data on fertility levels and preferences; contraceptive use; maternal and child health; infant, child, and neonatal mortality levels; maternal mortality; and health issues relevant to the achievement of the Sustainable Development Goals (SDGs) (e.g., gender, nutrition, awareness regarding HIV/AIDS)
- To measure maternal and neonatal morbidity and mortality and associated factors (e.g., prenatal and delivery care, pregnancy care)
- To provide information to address evaluation/monitoring needs of maternal and child health and family planning programs for evidence-based planning
- To provide information on availability of, access to, and use of mosquito nets as part of national malaria control programs
- To collect information on health-related matters such as breastfeeding, maternal and child care (prenatal, delivery, and postnatal), children's immunizations, and childhood diseases
- To measure the prevalence of anemia in women age 15-49 and children age 6-59 months
- To assess the nutritional status of children under age 5 by measuring weight and height
- To measure the prevalence of HIV in men age 15-59 and women age 15-49 and collect data on behavioral risk factors related to HIV
- To measure the prevalence of hepatitis B and C in men age 15-59 and women age 15-49
- To measure the seroprevalence of Ebola virus disease (EVD) antibodies in men age 15-59 and women age 15-49 and collect data on risk factors related to Ebola

- To assess the protection of children from violence and exploitation
- To collect information on knowledge and prevalence of female genital mutilation among women
- To assess the current environment regarding violence against women and girls

2 SURVEY IMPLEMENTATION

2.1 SAMPLE DESIGN

The sampling frame used for the 2019-20 LDHS is based on the 2008 National Population and Housing Census (NPHC), conducted by the Liberia Institute of Statistics and Geo-Information Services (LISGIS). Liberia is divided into 15 counties grouped to form five geographical regions, with each region consisting of three counties. Each county is divided into districts and each district into clans. In the 2008 NPHC, each clan was subdivided into enumeration areas (EAs). An enumeration area is a geographical area assigned to an enumerator for the purpose of conducting a census count; according to the Liberian census frame, each EA consists of an average of 100 households.

The 2019-20 LDHS followed a stratified two-stage cluster design. The first stage involved selecting sample points (clusters) consisting of EAs. EAs were drawn with a probability proportional to their size within each sampling stratum. A total of 325 clusters were selected.

The second stage involved systematic sampling of households. A household listing operation was undertaken in all of the selected clusters. During the listing, an average of 129 households were found in each cluster, from which a fixed number of 30 households were selected through an equal probability systematic selection process; the total sample size was 9,745 households. Results from this sample will be representative at the national, urban (Greater Monrovia and all other urban areas), and rural levels, including each of the five regions and 15 counties.

All women age 15-49 and men age 15-59 who were either permanent residents of the selected households or visitors who stayed in the households the night before the survey were eligible to be interviewed. All adult women age 18-49 and men age 18-59, as well as young women and men age 15-17, who either were emancipated or received parental or guardian consent were eligible for HIV testing. HIV testing was conducted in two ways: rapid diagnostic testing (RDT) and dried blood spot collection (DBS). RDT provided respondents with an immediate HIV status, while DBS samples were sent for laboratory testing to produce a more precise national HIV prevalence estimate. Hemoglobin testing for anemia was performed in each household among eligible women age 18-49 and young emancipated women age 15-17 who consented to being tested. With consent from parents or guardians, children age 6-59 months and young non-emancipated women age 15-17 were also tested for anemia in each household. In addition, height and weight information was collected from children age 0-59 months in all households.

All women age 18-49, men age 18-59, and young women and men age 15-17 who either were emancipated or received parental or guardian consent were also eligible for hepatitis B and C testing and EVD antibody testing by a follow-up survey team.

Finally, one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

2.2 QUESTIONNAIRES

Five questionnaires were used for the 2019-20 LDHS: the Household Questionnaire, the Woman's Questionnaire, the Man's Questionnaire, the Biomarker Questionnaire, and the Fieldworker Questionnaire. These questionnaires, based on The DHS Program's standard questionnaires, were adapted to reflect the population and health issues relevant to Liberia. Suggestions were solicited from various stakeholders representing government ministries and agencies, nongovernmental organizations, and international donors. After all questionnaires were finalized in English, they were translated into a form of simple English commonly understood in Liberia.

The Household Questionnaire listed all members of and visitors to selected households. Basic demographic information was collected on each person listed, including age, sex, marital status, education,

and relationship to the head of the household. For children under age 18, survival status of parents was determined. Information on child labor and discipline was collected for one randomly selected child age 1-17 in the household. Data on age and sex of household members were used to identify women and men eligible for individual interviews. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as source of water; type of toilet facilities; materials used for flooring, external walls, and roofing; ownership of various household goods; and access to and use of mosquito nets. In addition, household salt was tested for iodine content.

The Woman's Questionnaire was used to collect information from all eligible women age 15-49. These women were asked questions on the following topics:

- Background characteristics (including age, education, and media exposure)
- Reproduction and child mortality
- Contraception
- Prenatal, delivery, and postnatal care
- Vaccinations and childhood illnesses
- Maternal and child health and nutrition
- Marriage and sexual activity
- Fertility preferences
- Women's work and husbands' background characteristics
- Knowledge, awareness, and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs)
- Knowledge, attitudes, and behavior related to other health issues (e.g., injections, smoking, tuberculosis, childhood illnesses, and pregnancy and childbirth)
- Female genital mutilation
- Experiences during the Ebola outbreak in Liberia
- Adult and maternal mortality
- Domestic violence

The Man's Questionnaire was used to collect information from all eligible men age 15-59. Men were asked questions on the following topics:

- Background characteristics
- Reproduction
- Contraception
- Marriage and sexual activity
- Fertility preferences
- Employment and gender roles
- HIV/AIDS
- Experiences during the Ebola outbreak in Liberia
- Other health issues

The Biomarker Questionnaire was administered in two parts. The first part of the questionnaire was used to record the results of anthropometry measurements and hemoglobin and HIV testing, as well as to administer consent to eligible men and women for participation in the follow-up survey. The second part was used by the follow-up survey team to administer consent for collection of venous blood for hepatitis B and C testing and EVD antibody testing.

The self-administered Fieldworker Questionnaire, which gathered data on fieldworkers' general background characteristics, served as a tool in conducting analyses of data quality. The questionnaires were distributed and collected by LISGIS after final selection of fieldworkers and before fieldworkers entered the field. No personal identifiers were attached to the Liberia DHS fieldworkers' data file.

2.3 ANTHROPOMETRY, HEMOGLOBIN, AND HIV TESTING

The 2019-20 LDHS incorporated the following biomarkers: anthropometry, hemoglobin, HIV, hepatitis B and C, and EVD antibodies. All data related to the coverage of anthropometric measures and the results of hemoglobin and HIV testing were recorded in the first part of the Biomarker Questionnaire. All data related to testing for hepatitis B and C and for EVD antibodies were recorded in the second part of the questionnaire.

Data on HIV were collected through two methods: RDT, which provided respondents with immediate feedback regarding their HIV status, and collection of DBS samples. The DBS samples, along with the venous blood samples collected by the follow-up survey team, were sent for laboratory testing. The DBS samples will be used to produce a national HIV prevalence estimate. The venous blood samples will be used to produce national hepatitis B and C prevalence estimates and to estimate the EVD survivor population in Liberia.

The protocols for biomarker measurements, the survey methodology, and all instruments were approved by the ICF Institutional Review Board and the University of Liberia Pacific Institute for Research and Evaluation (UL-PIRE) in Liberia.

2.3.1 Anthropometry measurements

In all households, height and weight measurements were recorded for children age 0-59 months. Weight measurements were obtained using lightweight, electronic SECA 878 scales with a digital screen and the mother and child function. Height measurements were carried out with measuring boards made by Shorr Productions. Children younger than age 24 months were measured lying down (recumbent) on the board, while standing height was measured for older children.

2.3.2 Anemia testing

Blood specimens for anemia testing were collected from all children age 6-59 months and women age 15-49 for whom consent had been obtained. A consent statement was read to all eligible respondents or to the parent or adult responsible for children and young non-emancipated women age 15-17. This statement explained the purpose of the test and how the test would be performed, informed the respondent that the results would be made available as soon as the test was completed, and requested permission for the test to be carried out.

Blood samples were drawn from a drop of blood taken from a finger prick (or a heel prick for children less than age 12 months or children who were very thin) and collected in a microcuvette. Hemoglobin analysis was carried out on-site using a battery-operated portable HemoCue 201+ analyzer, which produces a result in less than 1 minute. Results were given verbally and in writing. Parents of children with a hemoglobin level below 7 g/dl were advised to take the child to a health facility for follow-up care. Likewise, non-pregnant women and pregnant women were referred for follow-up care if their hemoglobin levels were 7 g/dl and 9 g/dl or less, respectively. All households in which anthropometry measurements, anemia testing, or both were conducted were given a brochure explaining the causes of and ways to prevent anemia.

Lancets and other supplies and equipment used during collection of samples (HemoCue microcuvettes, gloves, gauze, alcohol swabs, bandage packaging, and waste collection bags) were disposed of safely, usually by taking the materials to a nearby health facility that uses proper protocols for the disposal of biohazardous waste.

2.3.3 HIV testing

All women and men interviewed with the individual questionnaire were eligible for HIV testing. The survey featured a parallel system for HIV testing. RDT was performed in the household according to a national HIV testing algorithm for respondents who wished to be informed of their status, and DBS

specimens were collected and transported to a central lab for anonymized testing. HIV prevalence for the survey will be based on the laboratory test results.

The national RDT algorithm in Liberia consists of a screening test (Determine® HIV 1/2) followed by confirmation of reactive specimens with a second rapid test (SD Bioline HIV 1/2 3.0). If a respondent tested positive on the screening test and negative on the second test, a third tie-breaker test was performed (Uni-Gold™ HIV). To test respondents via RDT, a blood sample was collected directly from a finger prick using a sample collection device supplied with the test kit.

Dedicated nurse counselors who provided pre- and post-test counseling conducted HIV rapid testing. Pretest counseling included an explanation of HIV infection and transmission, the meaning of test results, risks associated with sexual behaviors, and how to prevent and treat HIV and other sexually transmitted infections. Post-test counseling messages were tailored to respondents' HIV results and risk profiles.

The testing and delivery of results at home were done after creating conditions that would guarantee the confidentiality of the respondents. All respondents with HIV-seropositive results were referred to the nearest health facility for further care and treatment.

For HIV testing using DBS samples, at the time of collection of the blood sample, a unique and random barcoded identification number was assigned to each respondent who consented to testing. Sheets of peel-off labels with unique barcodes were pre-printed for use in the field. Matching barcode labels were affixed to the Biomarker Questionnaire, a fresh filter paper card, and a DBS transmittal sheet.

Approximately every 2 weeks, or more frequently, all DBS samples and transmittal sheets from the same clusters were picked up from teams in the field by central office coordinators and transported to the Liberia National Reference Laboratory (NRL) for processing and registration. Each specimen was then assigned a unique, serial laboratory number during the registration process at the lab before being stored in a freezer for preservation. The DBS laboratory testing is scheduled to be conducted at NRL.

2.4 PRETEST

Fifteen participants (nine women and six men) took part in training to pretest the LDHS survey questionnaires over a 4-week period from June 17 to July 13, 2019.

The pretest training utilized a blended approach to train participants concurrently on the paper questionnaires and on computer-assisted personal interviewing (CAPI), an electronic data capture system programmed on tablet computers that the participants used to implement the survey. LISGIS personnel and staff from The DHS Program led the classroom portion of the training together in standard English and Liberian English from June 17 to July 8. In addition, specialists from the MOH, UNFPA, and UNICEF were invited to make short presentations on programs in Liberia that provide services in the areas of family planning, reproductive health, HIV/AIDS and other STIs, childhood immunization, and domestic violence. Speakers from the CDC were also invited to deliver a lecture on Ebola in Liberia.

The 2019-20 LDHS incorporated a two-part field operation involving both LDHS biomarker technicians and a follow-up survey team of CDC-affiliated phlebotomists, counselors, and supervisors. Six participants attended the LDHS biomarker training from July 1-8. The training utilized a variety of different learning tools such as formal lectures on the technical aspects of biomarker collection, descriptions of the target population and eligibility, videos to demonstrate the process of anthropometry and blood collection, and hands-on demonstrations. In addition to the above-mentioned training, biomarker technicians participated in an anthropometry standardization exercise, a health clinic visit, and 4 days of field practice. Staff from The DHS Program supported follow-up survey training for nine participants, which ran concurrently with the LDHS biomarker technician training.

On July 9, to improve team coordination, all LDHS pretest training participants (supervisors, interviewers, and biomarker technicians for both the standard and follow-up surveys) were divided into three teams that mirrored the team composition proposed for the actual fieldwork and simulated all components of the 2019-20 LDHS data collection in the LISGIS training hall. The team supervisors also simulated the interaction and handoff of survey materials to the follow-up team supervisors.

From July 10-13, interviewers and biomarker technicians conducted practice fieldwork to solidify skills learned during pretest training and to provide a simulated fieldwork experience to test survey materials. The participants worked in the same three teams as in the simulation. The standard LDHS teams were composed of one male or female supervisor, three female interviewers, one male interviewer, and two biomarker technicians. The follow-up survey teams joined the fieldwork practice on days 3 and 4. The practice occurred in three communities (one urban and two rural) that were not far from the training venue. Each team visited one community, which served as a practice mini-cluster of 15 households. To complete the fieldwork, each interviewer had to complete at least one household interview per day. While the interviewers recorded responses on tablet computers using CAPI, the Biomarker Questionnaires were first filled out on paper and later entered into the CAPI system by the interviewers. Most interviews were conducted in Liberian English. Over the course of field practice, 40 households and 57 individual women and men were interviewed. At the end of each day, both during and after the pretest fieldwork, debriefing sessions were held and questionnaires were modified based on lessons drawn from the exercise.

2.5 TRAINING OF FIELD STAFF

Ninety-five people (37 men and 58 women) attended the training on the questionnaire content, which consisted of lectures, demonstrations, and practice interviews. Thirty-eight LDHS biomarker technicians (11 male and 27 female) attended a parallel training course on conducting biomarker tests. A follow-up survey training course was also held in parallel.

The main fieldwork training, conducted from September 2-28, 2019, was led by eight LISGIS coordinators with assistance from six training assistants selected from the pretest exercise. The training was backstopped by staff from The DHS Program. The interviewer training was conducted in standard English, with portions in Liberian English, and sessions discussed concepts, procedures, and methodology related to conducting the survey. As in the pretest training, the main fieldwork training utilized a blended approach to train participants on the paper questionnaires and CAPI concurrently. Again, senior subject specialists from the MOH, UNFPA, and UNICEF were invited to make short presentations on programs in Liberia that provide services in the areas of family planning and reproductive health, HIV/AIDS and other STIs, childhood immunization, and domestic violence, and representatives from the CDC delivered a lecture on Ebola in Liberia. The training included presentations, lectures, hands-on exercises, mock interviews, role-plays, group work, and quizzes. In-class exercises included probing for age, checking age consistencies, copying information from vaccination cards, completing the reproductive calendar, and practicing interviews. All participants also received training on how to test household salt for iodine. Data processing staff from The DHS Program and information technology (IT) personnel from LISGIS led all sessions on CAPI. Participants learned about features of the data collection system, different scenarios and technical issues typically encountered during fieldwork, and ways to resolve issues.

The biomarker portion of the main fieldwork training ran from September 9-28. This training was led by staff from The DHS Program with assistance from LISGIS coordinators and training assistants. Staff members from the Liberia National AIDS Control Program supported the HIV portion of the training. Biomarker training included classroom instruction that focused on anthropometry measurements, anemia and HIV testing, appropriate procedures for obtaining informed consent, recording of biomarker information in the Biomarker Questionnaire, reporting test results back to respondents with referrals as needed, and pre- and post-test counseling for HIV. The facilitators used learning tools similar to those used during the pretest, including an anthropometry standardization exercise, a health clinic visit, and 4 days of field practice.

The training of follow-up survey staff was held in concurrence with the biomarker training and was led by the CDC and WHO, with occasional assistance from The DHS Program.

On the last 2 days of the classroom portion of the training, supervisors, interviewers, and biomarker technicians were divided into 19 fieldwork teams. The teams then simulated all components of the 2019-20 LDHS data collection on September 20 and 21. The team supervisors also simulated the handoff of materials to the follow-up team supervisors.

A joint classroom session of the biomarker technicians with the interviewers was also organized. All participants were given an overview of biomarker collection in the 2019-20 LDHS. This described eligibility for biomarker collection, use of the Household and Biomarker Questionnaires to record data, appropriate procedures for obtaining informed consent, supply packing and transportation logistics, and how to facilitate intra-team coordination and cooperation.

A 1-day training session for supervisors was held to cover topics including preparation for the practice fieldwork, team and workflow management, monitoring of data collection and biomarker procedures, and conducting quality control checks on the survey questionnaires. The CDC presented background on the follow-up team objectives and work and provided guidance on how the two teams should communicate and cooperate.

Throughout the training, participants were evaluated through in-class exercises, quizzes, and observations made during field practice. At the end of the training, teams were formed by selecting supervisors, interviewers, and biomarker technicians.

From September 24-28, interviewers and biomarker technicians conducted practice fieldwork to solidify skills learned during the training and to provide a simulated fieldwork experience to test survey materials. The practice occurred in five communities in Margibi County, two of which were urban and three which were rural. The five communities were divided into 19 mini-clusters of 10 households each. Each team was assigned a mini-cluster. To complete the fieldwork, each interviewer had to complete at least one household per day. All of the interviewers/supervisors had the opportunity to practice household and individual interviews, while the biomarker technicians practiced testing and measuring eligible household members. On average, each interviewer interviewed 2.5 households, female interviewers completed 4.4 interviews with women, and male interviewers completed 6.5 interviews with men.

The follow-up teams also visited the same five communities after practicing the survey questionnaire handoff. As part of the practice fieldwork, the follow-up teams administered consent for collection of venous blood from consenting eligible respondents.

2.6 FIELDWORK

Data collection was carried out by 17 teams, with each team consisting of six members typically featuring the following composition: one supervisor, three female interviewers, one male interviewer, and two biomarker technicians.

All 17 teams were scheduled to deploy to the field on October 2. Due to administrative issues related to payments, fieldwork did not begin until October 16. The nine follow-up survey teams began fieldwork 2 weeks later. To ensure that all aspects of the survey were still well understood among fieldworkers, a series of refresher training sessions were held on October 7, 13, and 14.

Fieldwork monitoring was an integral part of the LDHS. Coordinators from LISGIS, monitoring assistants (previously training assistants) hired by LISGIS, and USAID Liberia senior staff visited teams regularly to review their work and monitor data quality. LISGIS organized coordinators and two biomarker monitoring assistants to visit teams, resolve any issues that arose in teams accessing clusters, monitor data and biomarker collection and quality, distribute supplies, and pick up DBS cards from teams and drop them off

at the National Reference Laboratory. Fieldwork monitoring assistants, on the other hand, moved from team to team in the field and closely monitored data collection and data quality, as well as supporting technological and technical aspects of fieldwork. LISGIS IT staff were deployed to teams on an as-needed basis to resolve complex CAPI-related issues. The DHS Program resident advisor monitored data collection and biomarker collection for the first half of data collection. Two additional fieldwork monitoring visits by staff from The DHS Program were made from December 11-21 and January 16-31.

During field visits, monitors provided the teams they visited with critical feedback to improve their performance. All monitors used the LDHS field-check tables as well as data quality and fieldwork status reports, based on data from completed clusters, to illustrate problems specific to each team visited.

2.7 DATA PROCESSING

All electronic data files were transferred via a secure internet file streaming system to the LISGIS central office in Monrovia, where they were stored on a password-protected computer. The data processing operation included secondary editing, which required resolution of computer-identified inconsistencies and coding of open-ended questions. The data were processed by the LISGIS data processing manager and two secondary editors who took part in the pretest and main fieldwork training; they were supervised remotely by staff from The DHS Program. Data editing was accomplished using CSPro software. During the fieldwork, field-check tables were generated to assess various data quality parameters, and specific feedback was given to the teams to improve their performance. Secondary editing and data processing were initiated in October 2019 and completed in March 2020.

3 KEY FINDINGS

3.1 RESPONSE RATES

Table 1 shows response rates for the 2019-20 LDHS. All 9,745 households in the selected housing units were eligible for the survey, and 9,207 of these households were occupied. Of the occupied households, 9,068 were successfully interviewed, yielding a response rate of 99%.

In the interviewed households, 8,364 women age 15-49 were identified for individual interviews; 8,065 women were interviewed, yielding a response rate of 96% (two percentage points lower than the response rate achieved in the 2013 survey). A total of 4,527 men were eligible for individual interviews; 4,249 of these men were interviewed, producing a response rate of 94% (a one percentage point decrease from the previous survey).

Result	Residence				Total
	Total urban	Greater Monrovia	Other urban	Rural	
Table 1 Results of the household and individual interviews					
Number of households, number of interviews, and response rates, according to residence (unweighted), Liberia DHS 2019-20					
Household interviews					
Households selected	3,605	991	2,614	6,140	9,745
Households occupied	3,401	929	2,472	5,806	9,207
Households interviewed	3,321	887	2,434	5,747	9,068
Household response rate ¹	97.6	95.5	98.5	99.0	98.5
Interviews with women age 15-49					
Number of eligible women	3,463	970	2,493	4,901	8,364
Number of eligible women interviewed	3,338	917	2,421	4,727	8,065
Eligible women response rate ²	96.4	94.5	97.1	96.4	96.4
Household interviews in subsample					
Households selected	1,803	495	1,308	3,072	4,875
Households occupied	1,692	461	1,231	2,901	4,593
Households interviewed	1,650	436	1,214	2,868	4,518
Household response rate in subsample ¹	97.5	94.6	98.6	98.9	98.4
Interviews with men age 15-59					
Number of eligible men	1,683	478	1,205	2,844	4,527
Number of eligible men interviewed	1,563	415	1,148	2,686	4,249
Eligible men response rate ²	92.9	86.8	95.3	94.4	93.9

¹ Households interviewed/households occupied
² Respondents interviewed/eligible respondents

3.2 CHARACTERISTICS OF RESPONDENTS

Table 2 presents the distribution of women and men age 15-49 interviewed in the 2019-20 LDHS by background characteristics. For the most part, the female and male populations have similar distributions. In both populations, the proportion of women and men in each age group decreases with increasing age, reflecting the comparatively young age structure of the population in Liberia. More than half of the women (56%) and men (55%) in the sample are under age 30. The vast majority of women (84%) and men (83%) are Christian. Fourteen percent of women and men are Muslim.

Table 2 shows that about 4 in 10 women (39%) and men (44%) have never been married, representing an increase among women but not men from the last survey (31% and 43%, respectively). Approximately half of women (52%) and men (50%) are either married or living with someone as if married.

About 6 in 10 women and men (62% and 61%, respectively) live in urban areas. By region, the vast majority of female and male respondents live in either South Central or North Central. Over half of women and men live in the South Central region (51% each), while one in three live in North Central (30% and 29%, respectively). In agreement with the regional distribution of respondents, by county, the largest proportion of respondents live in Montserrado (40% of both female and male respondents), while the

smallest proportions live in River Gee, River Cess, Gbarpolu, and Grand Kru (2% or fewer female and male respondents in each county).

Generally, educational attainment in Liberia remains low; only 46% of female respondents and 64% of male respondents have at least some high school education. Thirty-one percent of women and 13% of men have no education, representing very little change since the 2013 survey.

Table 2 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Liberia DHS 2019-20

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	20.5	1,657	1,716	22.9	875	885
20-24	18.7	1,506	1,408	17.2	658	596
25-29	17.1	1,375	1,202	14.6	558	459
30-34	13.8	1,112	1,052	12.9	494	482
35-39	12.6	1,020	1,103	12.8	487	488
40-44	9.5	769	857	10.9	418	456
45-49	7.8	626	727	8.6	330	394
Religion						
Christian	84.0	6,776	6,878	83.1	3,175	3,114
Muslim	14.3	1,153	1,046	13.8	527	484
Traditional religion	0.4	31	42	2.0	76	108
No religion	1.2	100	98	1.1	41	50
Other	0.1	4	1	0.1	2	4
Marital status						
Never married	38.8	3,128	2,621	44.1	1,684	1,537
Married	25.6	2,067	2,315	21.7	831	934
Living together	26.6	2,149	2,339	28.1	1,075	1,090
Divorced/separated	7.2	584	645	5.5	211	184
Widowed	1.7	137	145	0.5	20	15
Residence						
Urban	62.3	5,023	3,338	60.5	2,312	1,434
Greater Monrovia	35.5	2,866	917	35.8	1,368	385
Other urban	26.7	2,156	2,421	24.7	944	1,049
Rural	37.7	3,042	4,727	39.5	1,509	2,326
Region						
North Western	7.7	621	1,158	7.9	301	508
South Central	50.9	4,106	2,301	50.5	1,931	1,016
South Eastern A	5.7	459	1,195	6.7	255	665
South Eastern B	5.5	441	1,486	5.9	226	741
North Central	30.2	2,438	1,925	29.0	1,108	830
County						
Bomi	3.1	249	401	3.1	118	161
Bong	9.9	795	671	8.5	324	257
Gbarpolu	1.4	112	337	1.4	53	160
Grand Bassa	5.8	467	543	5.2	197	233
Grand Cape Mount	3.2	260	420	3.4	130	187
Grand Gedeh	2.1	172	384	2.4	92	210
Grand Kru	1.7	136	449	1.7	67	213
Lofa	8.2	658	581	7.5	287	240
Margibi	5.5	441	539	5.5	209	260
Maryland	2.7	215	574	2.9	110	281
Montserrado	39.7	3,198	1,219	39.9	1,524	523
Nimba	12.2	985	673	13.0	496	333
River Cess	1.3	104	365	1.4	52	192
River Gee	1.1	91	463	1.3	50	247
Sinoe	2.3	183	446	2.9	111	263
Education						
No education	30.7	2,474	2,985	13.0	498	613
Elementary	23.7	1,911	2,389	23.0	877	1,114
Junior high	17.9	1,445	1,329	19.3	738	800
Senior high	21.8	1,761	1,117	34.1	1,303	986
Higher	5.9	474	245	10.6	404	247
Wealth quintile						
Lowest	17.1	1,379	2,104	17.2	658	970
Second	17.7	1,431	2,029	17.4	663	965
Middle	18.8	1,516	1,723	19.4	743	816
Fourth	22.7	1,829	1,242	21.9	837	537
Highest	23.7	1,910	967	24.1	920	472
Total 15-49	100.0	8,065	8,065	100.0	3,821	3,760
50-59	na	na	na	na	428	489
Total 15-59	na	na	na	na	4,249	4,249

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
na = Not applicable

3.3 ACCESS TO DRINKING WATER

Households interviewed in the 2019-20 LDHS were asked to report their source of drinking water. Table 3 presents the percentage of the de jure population by drinking water source. The de jure population includes only usual residents of the interviewed household and excludes non-residents who stayed in the household the night before the interview. The de facto population, in contrast, includes all residents and non-residents who stayed in the household the night before the interview.

Table 3 shows that 85% of the de jure population uses an improved source of drinking water. Seventy-four percent of de jure residents qualify as having basic drinking water service, defined as having drinking water from an improved source either on the premises or requiring travel of 30 minutes or less (round-trip) to collect it. The proportion of residents with basic drinking water service is considerably higher in urban areas than rural areas (83% versus 63%). By county, basic drinking service is most common in Grand Gedeh (91%) and least common in River Cess (50%). The percentage of the de jure population with basic drinking water service increases with increasing household wealth.

Table 3 Drinking water according to background characteristics

Percent distribution of de jure population by drinking water source, percentage of de jure population with basic drinking water service, and percentage with limited drinking water service, according to residence, region, county, and wealth quintile, Liberia DHS 2019-20

Background characteristic	Improved source of drinking water ¹	Unimproved source of drinking water ²	Total	Percentage with basic drinking water service ³	Percentage with limited drinking water service ⁴	Number of persons
Residence						
Urban	95.0	5.0	100.0	82.7	12.3	23,830
Greater Monrovia	98.9	1.1	100.0	84.4	14.5	12,474
Other urban	90.7	9.3	100.0	80.8	9.9	11,356
Rural	70.7	29.3	100.0	63.0	7.7	17,638
Region						
North Western	82.6	17.4	100.0	73.1	9.5	3,492
South Central	89.7	10.3	100.0	78.1	11.7	18,761
South Eastern A	73.1	26.9	100.0	69.8	3.2	2,597
South Eastern B	83.1	16.9	100.0	70.9	12.2	2,416
North Central	80.8	19.2	100.0	71.0	9.8	14,201
County						
Bomi	92.1	7.9	100.0	85.1	7.0	1,343
Bong	78.1	21.9	100.0	62.8	15.3	4,054
Gbarpolu	64.9	35.1	100.0	56.8	8.1	677
Grand Bassa	56.0	44.0	100.0	54.1	1.9	2,354
Grand Cape Mount	82.0	18.0	100.0	69.6	12.4	1,473
Grand Gedeh	96.0	4.0	100.0	90.9	5.1	923
Grand Kru	66.7	33.3	100.0	54.7	12.0	754
Lofa	79.0	21.0	100.0	70.2	8.8	3,535
Margibi	86.4	13.6	100.0	76.6	9.8	2,298
Maryland	90.5	9.5	100.0	78.0	12.5	1,159
Montserrado	95.9	4.1	100.0	82.3	13.6	14,109
Nimba	83.4	16.6	100.0	76.5	6.9	6,613
River Cess	52.1	47.9	100.0	50.3	1.7	647
River Gee	90.8	9.2	100.0	79.0	11.7	503
Sinoe	65.8	34.2	100.0	63.2	2.5	1,028
Wealth quintile						
Lowest	54.1	45.9	100.0	48.6	5.5	8,278
Second	82.5	17.5	100.0	75.0	7.5	8,298
Middle	91.5	8.5	100.0	79.9	11.7	8,298
Fourth	96.9	3.1	100.0	80.7	16.2	8,290
Highest	98.0	2.0	100.0	87.2	10.8	8,304
Total	84.6	15.4	100.0	74.3	10.3	41,468

¹ Defined as drinking water piped into the dwelling/yard/plot or to a neighbor; water from a public tap/standpipe, hand pump/tubewell/borehole, protected dug well, protected spring, or tanker truck/cart with a small tank; rainwater; bottled water; or mineral water in a sachet

² Defined as drinking water from an unprotected dug well, unprotected spring, surface water, or drinking water from another unimproved source

³ Defined as drinking water from an improved source, provided either water is on the premises or round-trip collection time is 30 minutes or less. Includes safely managed drinking water, which is not shown separately.

⁴ Drinking water from an improved source, and round-trip collection time is more than 30 minutes or is unknown

3.4 SANITATION

Table 4 shows that under half (48%) of de jure residents have access to an improved sanitation facility. Twenty-four percent of de jure residents qualify as having basic sanitation service, that is, improved sanitation facilities that are not shared with other households. Basic sanitation service is more common in urban areas; 35% of urban residents have basic sanitation service, as compared with 9% of rural residents. By region, residents of South Central are considerably more likely than residents of other regions to have basic sanitation service (35% versus 16% or less in other regions). By county, the de jure populations of Montserrado (38%) and Margibi (35%) are most likely to have basic sanitation service, while residents of Grand Kru (3%) are least likely to have basic service. Basic sanitation service increases dramatically with increasing wealth; 64% of residents of the wealthiest households have basic sanitation service, as compared with only 2% of those in the poorest households.

The percentage of de jure residents who lack any sanitation facility and rely on open defecation has decreased by 10 percentage points since 2013 (from 45% to 35%).

Table 4 Sanitation facility type according to background characteristics

Percent distribution of de jure population by type of sanitation, percentage of de jure population with basic sanitation service, and percentage with limited sanitation service, according to residence, region, county, and wealth quintile, Liberia DHS 2019-20

Background characteristic	Type of sanitation			Total	Percentage with basic sanitation service ³	Percentage with limited sanitation service ⁴	Number of persons
	Improved sanitation facility ¹	Unimproved sanitation facility ²	Open defecation				
Residence							
Urban	66.6	17.8	15.6	100.0	35.0	30.7	23,830
Greater Monrovia	76.1	15.8	8.1	100.0	40.0	35.5	12,474
Other urban	56.1	19.9	24.0	100.0	29.5	25.4	11,356
Rural	22.0	17.4	60.7	100.0	8.7	12.6	17,638
Region							
North Western	26.7	11.5	61.8	100.0	9.3	17.1	3,492
South Central	64.7	14.3	21.0	100.0	35.2	28.9	18,761
South Eastern A	31.0	18.1	50.9	100.0	15.9	14.9	2,597
South Eastern B	26.3	40.7	33.0	100.0	9.8	16.3	2,416
North Central	36.8	19.4	43.8	100.0	16.1	19.3	14,201
County							
Bomi	23.9	12.0	64.1	100.0	12.0	11.9	1,343
Bong	36.9	13.6	49.5	100.0	19.0	17.9	4,054
Gbarpolu	19.4	10.4	70.2	100.0	6.0	13.2	677
Grand Bassa	34.9	11.8	53.2	100.0	17.1	17.1	2,354
Grand Cape Mount	32.6	11.5	55.9	100.0	8.3	23.7	1,473
Grand Gedeh	45.7	20.6	33.7	100.0	18.9	26.5	923
Grand Kru	8.0	35.6	56.4	100.0	2.5	5.0	754
Lofa	27.2	23.5	49.3	100.0	10.3	16.3	3,535
Margibi	52.6	12.4	35.0	100.0	34.9	16.6	2,298
Maryland	35.7	39.9	24.3	100.0	12.1	23.5	1,159
Montserrado	71.7	15.0	13.3	100.0	38.3	32.9	14,109
Nimba	41.8	20.8	37.4	100.0	17.5	21.8	6,613
River Cess	22.6	21.7	55.7	100.0	13.4	9.0	647
River Gee	32.2	50.2	17.7	100.0	15.3	16.4	503
Sinoe	23.0	13.7	63.3	100.0	14.7	8.2	1,028
Wealth quintile							
Lowest	8.7	12.8	78.4	100.0	1.9	6.6	8,278
Second	23.8	22.1	54.1	100.0	6.5	16.0	8,298
Middle	46.3	25.3	28.4	100.0	17.5	27.7	8,298
Fourth	69.9	19.2	10.9	100.0	28.8	40.4	8,290
Highest	89.2	8.5	2.3	100.0	64.2	24.4	8,304
Total	47.6	17.6	34.8	100.0	23.8	23.0	41,468

¹ Defined as flush/pour flush to piped sewer system, septic tank, pit latrine, ventilated improved pit (VIP) latrine, pit latrine with slab, or composting toilet

² Defined as flush/pour flush not to sewer/septic tank/pit latrine, pit latrine without slab/open pit, bucket toilet, hanging toilet/latrine, or other unimproved facility

³ Defined as use of improved facilities that are not shared with other households. Includes safely managed sanitation service, which is not shown separately.

⁴ Defined as use of improved facilities shared by 2 or more households

3.5 BIRTH REGISTRATION

Table 5 presents information on birth registration of children under age 5. Two in three children (66%) have their births registered with the civil authorities. There is little variation by age, sex, residence, or region in the percentage of births registered. However, under 40% of births are registered in River Gee County (33%), Bong County (38%), and Sinoe County (39%), as compared with 85% in Lofa County. Birth registration increases with increasing wealth, from 62% among children in the poorest households to 75% among children in the wealthiest households.

The proportion of children under age 5 who have a birth certificate has increased since 2013, from 25% to 30%. The 2013 LDHS did not ask about civil registration of children who do not have birth certificates; in the present survey, registration was more common among children without a birth certificate (36%) than among those with a birth certificate (30%).

Table 5 Birth registration of children under age 5

Percentage of de jure children under age 5 whose births are registered with the civil authorities, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage of children whose births are registered and who:			Number of children
	Had a birth certificate	Did not have a birth certificate	Total percentage of children whose births are registered	
Age				
<2	27.9	39.4	67.3	2,300
2-4	31.7	33.9	65.6	3,712
Sex				
Male	30.4	36.7	67.1	3,015
Female	30.1	35.3	65.4	2,997
Residence				
Urban	32.0	37.3	69.3	3,215
Greater Monrovia	32.8	39.9	72.7	1,567
Other urban	31.3	34.7	66.0	1,647
Rural	28.2	34.5	62.8	2,797
Region				
North Western	36.3	35.1	71.4	507
South Central	31.2	35.3	66.5	2,479
South Eastern A	24.5	35.7	60.2	368
South Eastern B	24.6	40.1	64.7	338
North Central	29.7	36.3	66.0	2,320
County				
Bomi	35.4	37.9	73.3	176
Bong	25.7	12.0	37.7	632
Gbarpolu	29.5	41.4	70.9	102
Grand Bassa	28.5	28.4	56.9	371
Grand Cape Mount	40.1	30.2	70.3	230
Grand Gedeh	21.3	55.5	76.9	132
Grand Kru	15.9	56.3	72.2	115
Lofa	59.7	25.1	84.9	510
Margibi	27.6	37.9	65.5	306
Maryland	33.1	38.8	71.9	159
Montserrado	32.4	36.3	68.7	1,802
Nimba	18.8	54.3	73.1	1,178
River Cess	23.2	44.8	68.0	96
River Gee	18.9	13.8	32.8	63
Sinoe	28.4	10.7	39.2	140
Wealth quintile				
Lowest	22.9	38.6	61.5	1,443
Second	28.3	34.9	63.3	1,363
Middle	32.6	33.1	65.7	1,154
Fourth	33.3	35.4	68.8	1,059
Highest	37.6	37.6	75.2	993
Total	30.3	36.0	66.3	6,012

3.6 FERTILITY

Women who were interviewed in the 2019-20 LDHS were asked to report the total number of sons and daughters they had given birth to during their lifetime. To ensure complete reporting, women were asked separately about children living at home, those living elsewhere, and those who had died. A complete birth history was obtained from each respondent, including information on the sex, date of birth, and survival status of each child. Age-specific and total fertility rates (TFRs) were calculated directly from the birth history data.

Table 6 shows age-specific fertility rates among women by 5-year age groups for the 3-year period preceding the survey. The table also presents data on the total fertility rate, which is a summary measure of the level of fertility and serves as an estimate of the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed age-specific rates. If fertility were to remain constant at current levels, a woman from Liberia would bear an average of 4.2 children in her lifetime. The TFR for rural areas (5.5 births per woman) is more than two children higher than that for urban areas (3.4 births). Across the various age groups, fertility is consistently higher among rural than urban women. Among both urban and rural women, the TFR peaks in the 20-24 age group.

Table 6 Current fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the 3 years preceding the survey, according to residence, Liberia DHS 2019-20

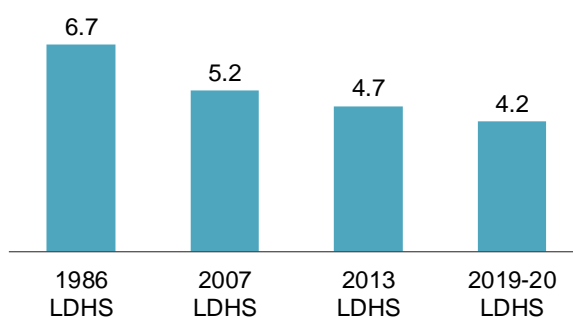
Age group	Residence		Total
	Urban	Rural	
10-14	4	4	4
15-19	98	185	128
20-24	168	250	194
25-29	147	223	173
30-34	108	179	135
35-39	104	158	128
40-44	39	91	64
45-49	7	22	16
TFR (15-49)	3.4	5.5	4.2
GFR	121	188	146
CBR	27.5	33.6	30.1

Note: Age-specific fertility rates are per 1,000 women. Rates are for the period 1-36 months preceding the interview. Rates for the 10-14 age group are based on retrospective data from women age 15-17. TFR: Total fertility rate, expressed per woman. GFR: General fertility rate, expressed per 1,000 women age 15-44. CBR: Crude birth rate, expressed per 1,000 population

Figure 1 presents trends in the TFR since the 1986 LDHS. The overall fertility rate in Liberia has declined over the past 34 years and has fallen by one child since 2007, from 5.2 to 4.2 children per woman.

Figure 1 Trends in total fertility rate, 1986—2019-20

Total fertility rate for the 3 years before each survey



3.7 TEENAGE PREGNANCY AND MOTHERHOOD

The issue of adolescent fertility is important on both health and social grounds. Children born to very young mothers are at increased risk of sickness and death. Teenage mothers are more likely to experience adverse pregnancy outcomes and are more constrained in their ability to pursue educational opportunities than young women who delay childbearing.

Table 7 shows the percentage of women age 15-19 who have given birth or were pregnant with their first child at the time of the survey according to background characteristics. Overall, 30% of women age 15-19 have begun childbearing: 25% have had a live birth, and 5% were pregnant with their first child at the time of the interview. The proportion of young women who have begun childbearing increases rapidly with age, from 4% among those age 15 to 55% among those age 19. Rural teenagers tend to start childbearing earlier than other teenagers. Early childbearing among teenagers is more common in River Cess County (55%) than in other counties, especially Maryland (19%). Teenagers with no education (47%) are more likely to have started childbearing than those with at least some education (20%-31%). Also, childbearing is more common among teenagers in the lowest three wealth quintiles (40%-42%).

Adolescent fertility has declined only slightly since 2013, from 31% to 30%.

Table 7 Teenage pregnancy and motherhood

Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage of women age 15-19 who:		Percentage who have begun childbearing	Number of women
	Have had a live birth	Are pregnant with first child		
Age				
15	1.4	2.9	4.2	319
16	9.7	2.3	12.0	366
17	28.5	7.0	35.5	287
18	36.5	7.9	44.4	321
19	49.1	6.1	55.2	363
Residence				
Urban	21.5	4.3	25.8	1,066
Greater Monrovia	17.1	4.5	21.6	556
Other urban	26.2	4.2	30.4	511
Rural	31.8	6.7	38.5	591
Region				
North Western	30.2	6.9	37.0	134
South Central	21.6	4.5	26.1	859
South Eastern A	28.1	7.7	35.8	89
South Eastern B	20.8	4.7	25.4	104
North Central	30.6	5.6	36.2	471
County				
Bomi	22.4	8.4	30.9	56
Bong	31.7	5.5	37.1	164
Gbarpolu	44.5	3.8	48.3	19
Grand Bassa	37.8	1.5	39.4	110
Grand Cape Mount	32.9	6.4	39.3	59
Grand Gedeh	23.4	3.8	27.2	32
Grand Kru	26.4	6.4	32.8	34
Lofa	26.0	7.7	33.7	148
Margibi	27.5	6.8	34.3	94
Maryland	13.8	5.1	18.9	48
Montserrado	18.1	4.6	22.7	656
Nimba	33.8	3.6	37.5	158
River Cess	39.5	15.6	55.0	22
River Gee	27.1	1.1	28.1	22
Sinoe	25.4	6.4	31.7	35
Education				
No education	38.4	8.1	46.5	172
Elementary	26.4	4.1	30.5	665
Junior high	23.9	6.5	30.4	556
Senior high	17.0	3.3	20.2	251
Higher	*	*	*	13
Wealth quintile				
Lowest	35.8	6.2	42.0	225
Second	34.0	6.0	40.1	276
Middle	33.8	6.5	40.3	362
Fourth	22.8	5.8	28.6	401
Highest	7.3	2.2	9.5	393
Total	25.2	5.2	30.3	1,657

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

3.8 FERTILITY PREFERENCES

Information on fertility preferences is used to assess the potential demand for family planning services for the purposes of spacing or limiting future childbearing. To elicit information on fertility preferences, several questions were asked of currently married women (pregnant or not) regarding whether they wanted to have a child (or another child) and, if so, how soon.

Table 8 shows that the majority of married Liberian women express a desire to control their future fertility. More than a third of women (34%) do not want to have any more children or are sterilized. The desire to limit fertility increases markedly by number of living children. For example, 92% of respondents with no children want to have a child; 71% say that they want to have a child soon, while 21% want to have a child

later or are undecided when. On the other hand, 30% of women with three children and more than half of women with five or more children say that they want no more children.

Table 8 Fertility preferences by number of living children

Percent distribution of currently married women age 15-49 by desire for children, according to number of living children, Liberia DHS 2019-20

Desire for children	Number of living children ¹							Total
	0	1	2	3	4	5	6+	
Have another soon ²	70.9	33.1	27.9	23.2	14.7	10.5	4.8	22.3
Have another later ³	15.6	41.8	29.6	25.7	17.0	10.1	6.4	22.3
Have another, undecided when	5.4	17.0	14.2	8.8	8.0	1.9	3.4	9.2
Undecided	1.7	3.6	9.2	9.4	12.1	11.6	10.4	8.9
Want no more	1.1	4.2	16.6	29.6	44.6	61.4	69.8	33.9
Sterilized ⁴	0.0	0.0	0.2	0.3	0.0	0.1	0.9	0.2
Declared infecund	5.4	0.4	2.5	3.0	3.6	4.4	4.3	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	197	630	850	777	609	549	604	4,216

¹ The number of living children includes the current pregnancy.

² Wants next birth within 2 years

³ Wants to delay next birth for 2 or more years

⁴ Includes both female and male sterilization

The proportion of women who say that they want to stop childbearing or are sterilized has increased from 30% to 34% since the 2013 LDHS. The proportion of women who want to have another child soon has remained stable in relation to the two previous LDHS surveys (20%-22%). However, the proportion of women who want to wait 2 or more years before having a child decreased from 39% in 2013 to 22% in 2019-20. The proportion of women who say that they cannot conceive remained stable at 3% over the same period.

3.9 FAMILY PLANNING

Family planning refers to a conscious effort by a couple to use contraceptives to limit or space the number of children they have. Contraceptive methods are classified as modern or traditional. Modern methods include female sterilization, male sterilization, intrauterine contraceptive devices (IUDs), implants, injectables, the pill, condoms, CycleBeads/standard days method, and the lactational amenorrhea method (LAM). Other methods such as rhythm, withdrawal, and folk methods are grouped as traditional.

Table 9 shows the percent distribution of currently married women and sexually active unmarried women by the family planning method they use, according to background characteristics. One in four married women of reproductive age are using a method of contraception (25%). Almost all of these women are using modern methods (24%), with only 1% using traditional methods. Injectables are the most widely used method (14%), followed by implants (5%) and the pill (4%).

In general, contraceptive use among married women in Liberia increases once they have had at least one child. Use of any contraceptive peaks at 28%-31% among currently married women age 20-34 before declining to 14% among women age 45-49.

While there is little variation in contraceptive use among married women residing in urban and rural areas, the difference is more pronounced across regions. Women in South Eastern B and South Eastern A are more likely to use any method of contraception (43% and 38%, respectively) than women in other regions (27% or less). By county, contraceptive use is highest among women in Maryland (45%) and lowest among women in Margibi (18%). Contraceptive use initially increases with educational attainment but drops off after women achieve some senior high schooling. Similarly, contraceptive use generally increases with increasing wealth but drops to 20% among women living in the wealthiest households.

Table 9 Current use of contraception according to background characteristics

Percent distribution of currently married women and sexually active unmarried women age 15-49 by contraceptive method currently used, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Any method	Any modern method	Female sterilization	Modern method					Any traditional method	Traditional method		Not currently using	Total	Number of women
				Pill	Injectables	Implants	Male condom	Other ¹		Rhythm	Withdrawal			
CURRENTLY MARRIED WOMEN														
Number of living children														
0	12.6	10.7	0.0	0.3	8.2	1.1	1.2	0.0	1.9	0.4	1.5	87.4	100.0	249
1-2	25.0	23.7	0.1	2.3	14.2	5.5	0.9	0.6	1.4	0.4	0.9	75.0	100.0	1,503
3-4	24.9	23.7	0.2	6.0	12.2	3.9	1.0	0.5	1.1	0.6	0.5	75.1	100.0	1,369
5+	27.8	27.3	0.5	4.9	16.3	5.2	0.4	0.0	0.4	0.3	0.2	72.2	100.0	1,094
Age														
15-19	9.2	9.2	0.0	0.8	7.3	0.7	0.3	0.0	0.0	0.0	0.0	90.8	100.0	204
20-24	28.3	27.1	0.0	1.5	18.6	5.0	1.4	0.6	1.2	0.1	1.1	71.7	100.0	625
25-29	30.8	28.1	0.0	4.6	16.9	4.8	1.2	0.6	2.6	0.4	2.3	69.2	100.0	788
30-34	28.4	27.2	0.0	5.3	15.2	5.9	0.6	0.1	1.2	1.0	0.2	71.6	100.0	819
35-39	24.6	24.6	0.1	3.8	13.6	5.7	1.0	0.4	0.0	0.0	0.0	75.4	100.0	785
40-44	22.6	21.7	1.0	6.0	10.4	3.7	0.6	0.0	0.9	0.9	0.0	77.4	100.0	545
45-49	14.4	13.9	0.7	3.8	6.0	2.4	0.0	1.0	0.5	0.4	0.1	85.6	100.0	449
Residence														
Urban	23.9	22.4	0.1	3.3	12.8	4.4	1.3	0.6	1.5	0.6	0.9	76.1	100.0	2,268
Greater Monrovia	22.7	20.7	0.0	3.1	10.1	4.8	1.6	0.9	2.1	0.8	1.3	77.3	100.0	1,150
Other urban	25.1	24.2	0.1	3.5	15.5	3.9	1.0	0.3	1.0	0.4	0.5	74.9	100.0	1,118
Rural	26.2	25.6	0.4	4.9	14.9	4.9	0.3	0.2	0.6	0.3	0.3	73.8	100.0	1,948
Region														
North Western	26.9	26.3	0.0	5.3	16.5	3.8	0.5	0.2	0.6	0.6	0.0	73.1	100.0	400
South Central	22.2	20.7	0.0	3.3	11.3	4.2	1.2	0.6	1.5	0.6	0.9	77.8	100.0	1,801
South Eastern A	37.6	36.9	0.2	3.6	24.6	7.9	0.5	0.0	0.7	0.5	0.2	62.4	100.0	297
South Eastern B	43.3	43.2	0.2	4.8	24.2	13.2	0.7	0.0	0.1	0.0	0.1	56.7	100.0	254
North Central	22.1	21.2	0.5	4.6	11.9	3.2	0.6	0.3	0.9	0.3	0.6	77.9	100.0	1,464
County														
Bomi	30.9	30.0	0.0	5.2	21.3	2.8	0.4	0.2	1.0	1.0	0.0	69.1	100.0	148
Bong	24.4	24.1	1.3	5.6	11.5	5.0	0.6	0.0	0.3	0.0	0.3	75.6	100.0	411
Gbarpolu	26.4	26.2	0.0	5.7	13.0	7.4	0.0	0.0	0.2	0.2	0.0	73.6	100.0	80
Grand Bassa	23.7	23.3	0.0	6.8	13.9	2.0	0.7	0.0	0.4	0.2	0.2	76.3	100.0	253
Grand Cape Mount	23.7	23.1	0.0	5.3	13.9	3.0	0.8	0.2	0.6	0.6	0.0	76.3	100.0	171
Grand Gedeh	38.0	37.0	0.1	3.4	27.6	4.5	1.4	0.0	1.0	1.0	0.0	62.0	100.0	116
Grand Kru	42.5	42.1	0.3	4.4	24.5	11.6	1.3	0.0	0.4	0.0	0.4	57.5	100.0	79
Lofa	22.7	21.7	0.0	6.7	11.7	2.8	0.0	0.5	1.0	1.0	0.0	77.3	100.0	380
Margibi	17.8	17.0	0.0	2.1	12.3	2.1	0.5	0.0	0.8	0.8	0.0	82.2	100.0	239
Maryland	45.1	45.1	0.2	5.0	23.3	15.9	0.6	0.1	0.0	0.0	0.0	54.9	100.0	120
Montserrado	22.7	20.8	0.0	2.9	10.7	5.0	1.4	0.9	1.9	0.7	1.2	77.3	100.0	1,309
Nimba	20.3	19.0	0.4	2.8	12.3	2.3	0.9	0.4	1.2	0.0	1.2	79.7	100.0	673
River Cess	35.1	33.7	0.6	6.4	22.3	4.4	0.0	0.0	1.5	0.7	0.8	64.9	100.0	66
River Gee	40.6	40.6	0.2	5.0	25.7	9.7	0.0	0.0	0.0	0.0	0.0	59.4	100.0	56
Sinoe	38.6	38.6	0.0	2.2	23.0	13.4	0.0	0.0	0.0	0.0	0.0	61.4	100.0	115
Education														
No education	20.9	20.2	0.5	4.7	11.1	3.8	0.1	0.1	0.6	0.2	0.4	79.1	100.0	1,814
Elementary	25.1	24.8	0.1	4.6	14.8	4.7	0.7	0.0	0.2	0.1	0.1	74.9	100.0	935
Junior high	33.0	31.6	0.0	3.0	19.5	7.6	1.2	0.2	1.5	0.2	1.2	67.0	100.0	586
Senior high	28.0	25.4	0.0	3.1	15.4	4.7	1.8	0.3	2.6	1.1	1.6	72.0	100.0	697
Higher	27.3	24.4	0.0	1.6	9.7	2.7	3.7	6.7	2.8	2.8	0.0	72.7	100.0	184
Wealth quintile														
Lowest	24.1	23.5	0.6	5.3	13.0	4.4	0.2	0.0	0.6	0.3	0.3	75.9	100.0	931
Second	26.4	25.2	0.2	4.0	15.9	4.2	0.5	0.3	1.3	0.4	0.9	73.6	100.0	903
Middle	23.9	23.2	0.2	5.1	14.0	3.7	0.2	0.0	0.7	0.0	0.7	76.1	100.0	808
Fourth	30.7	29.0	0.0	2.8	17.7	6.5	1.6	0.4	1.7	0.9	0.8	69.3	100.0	783
Highest	19.5	18.4	0.0	2.8	7.9	4.4	1.9	1.4	1.2	0.7	0.5	80.5	100.0	792
Total	24.9	23.9	0.2	4.1	13.7	4.6	0.8	0.4	1.1	0.5	0.6	75.1	100.0	4,216
SEXUALLY ACTIVE UNMARRIED WOMEN²														
Residence														
Urban	46.4	45.1	0.0	3.4	27.0	10.5	3.7	0.5	1.3	0.8	0.5	53.6	100.0	1,037
Greater Monrovia	45.4	44.3	0.0	2.4	25.8	10.4	4.9	0.8	1.1	0.4	0.8	54.6	100.0	695
Other urban	48.4	46.7	0.0	5.5	29.4	10.7	1.2	0.0	1.7	1.6	0.1	51.6	100.0	342
Rural	45.0	44.3	0.0	4.2	30.9	8.3	0.5	0.4	0.8	0.5	0.2	55.0	100.0	364
Total	46.0	44.9	0.0	3.6	28.0	9.9	2.9	0.5	1.2	0.7	0.5	54.0	100.0	1,402

Note: If more than one method is used, only the most effective method is considered in this tabulation.

¹ Other modern methods include IUD, emergency contraception, CycleBeads/standard days method (SDM), and lactational amenorrhea method (LAM).² Women who have had sexual intercourse within 30 days preceding the survey

Injectables are the most popular contraceptive method across all subgroups; irrespective of background characteristic, roughly half of current users rely on injectables to prevent pregnancy. Injectables are most popular among users in the South Eastern A and South Eastern B regions and users age 20-24.

Use of any contraceptive method by currently married women has more than doubled in the past 13 years, from 11% in 2007 to 20% in 2013 and 25% in 2019-20. The proportion of currently married women who use modern contraceptive methods has also increased, from 10% in 2007 to 19% in 2013 and 24% in 2019-20. Since 2013, use of injectables has increased from 11% to 14% and use of implants has increased from 2% to 5%.

Sexually active unmarried women are almost twice as likely as currently married women to use any form of contraception; 46% are using a contraceptive method, as compared with 25% of currently married women. Among sexually active unmarried women, 45% are using a modern method and 1% are using a traditional method. As among currently married women, the most commonly used methods among sexually active unmarried women are injectables (28%), implants (10%), and the pill (4%). In urban areas, sexually active unmarried women are more likely to use male condoms (4%) than the pill (3%), whereas in rural areas this trend is reversed; pill use is higher (4%) than condom use (1%).

Contraceptive use has also increased considerably over time among sexually active unmarried women, from 27% in 2007 to 37% in 2013 and 46% in 2019-20.

3.10 NEED AND DEMAND FOR FAMILY PLANNING

Unmet need for family planning refers to fecund women (currently married or in union) who are not using contraception but who wish to postpone their next birth (spacing) or stop childbearing altogether (limiting). An estimate of the size and composition of the population of women who have an unmet need for family planning services is useful for planning purposes in reproductive health programs.

The criteria used within The DHS Program to identify women with an unmet need for family planning have followed the Bradley et al. 2012 definition over the past several years. This definition was employed in determining the percentage of women who have an unmet need for family planning (Table 10).

Specifically, women are considered to have an unmet need for spacing if they are:

- At risk of becoming pregnant, not using contraception, and either do not want to become pregnant within the next 2 years or are unsure if or when they want to become pregnant
- Pregnant with a mistimed pregnancy
- Postpartum amenorrheic for up to 2 years following a mistimed birth and not using contraception

Women are considered to have an unmet need for limiting if they are:

- At risk of becoming pregnant, not using contraception, and want no (more) children
- Pregnant with an unwanted pregnancy
- Postpartum amenorrheic for up to 2 years following an unwanted birth and not using contraception

Women who are classified as infecund have no unmet need because they are not at risk of becoming pregnant.

Women using contraception are considered to have a met need. Women using contraception who say they want no (more) children are considered to have a met need for limiting, and women who are using contraception and say they want to delay having a child or are unsure if or when they want a (another) child are considered to have a met need for spacing.

Table 10 Need and demand for family planning among currently married women and sexually active unmarried women

Percentage of currently married women and sexually active unmarried women age 15-49 with unmet need for family planning, percentage with met need for family planning, percentage with met need for family planning who are using modern methods, percentage with demand for family planning, percentage of the demand for family planning that is satisfied, and percentage of the demand for family planning that is satisfied with modern methods, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Unmet need for family planning	Met need for family planning (currently using)		Total demand for family planning ³	Number of women	Percentage of demand satisfied ¹	
		All methods	Modern methods ²			All methods	Modern methods ²
CURRENTLY MARRIED WOMEN							
Age							
15-19	47.2	9.2	9.2	56.4	204	16.3	16.3
20-24	35.8	28.3	27.1	64.1	625	44.1	42.3
25-29	37.0	30.8	28.1	67.7	788	45.4	41.5
30-34	32.9	28.4	27.2	61.3	819	46.4	44.4
35-39	34.3	24.6	24.6	58.9	785	41.8	41.7
40-44	34.2	22.6	21.7	56.9	545	39.8	38.2
45-49	16.3	14.4	13.9	30.7	449	46.8	45.2
Residence							
Urban	34.3	23.9	22.4	58.2	2,268	41.1	38.5
Greater Monrovia	34.7	22.7	20.7	57.4	1,150	39.6	36.0
Other urban	33.8	25.1	24.2	58.9	1,118	42.6	41.0
Rural	32.5	26.2	25.6	58.6	1,948	44.6	43.6
Region							
North Western	32.9	26.9	26.3	59.8	400	45.0	44.0
South Central	36.1	22.2	20.7	58.3	1,801	38.0	35.4
South Eastern A	21.8	37.6	36.9	59.4	297	63.3	62.1
South Eastern B	19.5	43.3	43.2	62.8	254	69.0	68.8
North Central	35.1	22.1	21.2	57.1	1,464	38.6	37.0
County							
Bomi	29.5	30.9	30.0	60.5	148	51.2	49.6
Bong	32.9	24.4	24.1	57.3	411	42.6	42.1
Gbarpolu	31.1	26.4	26.2	57.5	80	45.9	45.5
Grand Bassa	36.3	23.7	23.3	60.1	253	39.5	38.8
Grand Cape Mount	36.5	23.7	23.1	60.2	171	39.3	38.4
Grand Gedeh	20.9	38.0	37.0	58.9	116	64.5	62.8
Grand Kru	18.0	42.5	42.1	60.5	79	70.2	69.6
Lofa	28.4	22.7	21.7	51.1	380	44.4	42.5
Margibi	42.6	17.8	17.0	60.4	239	29.4	28.1
Maryland	20.1	45.1	45.1	65.2	120	69.1	69.1
Montserrado	34.9	22.7	20.8	57.6	1,309	39.4	36.1
Nimba	40.2	20.3	19.0	60.4	673	33.5	31.5
River Cess	23.5	35.1	33.7	58.7	66	59.9	57.4
River Gee	20.1	40.6	40.6	60.7	56	66.9	66.9
Sinoe	21.6	38.6	38.6	60.2	115	64.1	64.1
Education							
No education	30.2	20.9	20.2	51.0	1,814	40.9	39.7
Elementary	38.7	25.1	24.8	63.8	935	39.3	38.9
Junior high	37.5	33.0	31.6	70.5	586	46.8	44.8
Senior high	35.2	28.0	25.4	63.2	697	44.3	40.1
Higher	19.3	27.3	24.4	46.6	184	58.5	52.4
Wealth quintile							
Lowest	33.4	24.1	23.5	57.5	931	42.0	40.9
Second	33.9	26.4	25.2	60.4	903	43.8	41.7
Middle	34.0	23.9	23.2	57.9	808	41.3	40.0
Fourth	34.4	30.7	29.0	65.1	783	47.2	44.6
Highest	31.5	19.5	18.4	51.0	792	38.3	36.0
Total	33.4	24.9	23.9	58.4	4,216	42.7	40.9
SEXUALLY ACTIVE UNMARRIED WOMEN⁴							
Residence							
Urban	37.7	46.4	45.1	84.1	1,037	55.2	53.6
Greater Monrovia	37.2	45.4	44.3	82.6	695	55.0	53.6
Other urban	38.7	48.4	46.7	87.1	342	55.5	53.6
Rural	39.3	45.0	44.3	84.3	364	53.4	52.5
Total	38.1	46.0	44.9	84.2	1,402	54.7	53.3

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al. 2012.

¹ Percentage of demand satisfied is met need divided by total demand.

² Modern methods include female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, emergency contraception, CycleBeads/standard days method (SDM), lactational amenorrhea method (LAM), and other modern methods.

³ Total demand is the sum of unmet need and met need.

⁴ Women who have had sexual intercourse within 30 days preceding the survey

Finally, total demand, percentage of demand satisfied, and percentage of demand satisfied by modern methods are defined as follows:

- **Total demand for family planning:** the sum of unmet need (for spacing and limiting) and total contraceptive use
- **Percentage of demand satisfied:** total contraceptive use divided by the sum of unmet need and total contraceptive use
- **Percentage of demand satisfied by modern methods:** use of modern contraceptive methods divided by the sum of unmet need and total contraceptive use

Table 10 presents data on unmet need, met need, and total demand for family planning services among currently married women and sexually active unmarried women. Overall, one in three currently married women have an unmet need for family planning (33%). One in four married women have a met need for family planning (25%)—that is, they are currently using a contraceptive method—and this has increased since 2013, when 20% of women had a met need for family planning. The total demand for family planning among currently married women is 58%, and the total demand satisfied is 43%; this demand is satisfied almost entirely by modern methods (41%). Thus, if all married women who said they want to space or limit their children were to use family planning methods, the contraceptive prevalence rate (CPR) would more than double, from 25% to 58%.

Level of unmet need varies by background characteristics. Unmet need is highest among married women age 15-19 (47%) and lowest among women age 45-49. Total unmet need among urban and rural married women is similar (34% and 33%, respectively). Across regions, unmet need is highest in South Central, North Central, and North Western (33%-36%) and lowest in South Eastern A and South Eastern B (20%-22%). By county, unmet need is highest in Margibi (43%) and lowest in Grand Kru (18%). Women with an elementary or high school education have higher levels of unmet need than women with no education or some higher education. Unmet need is similar across women in all wealth quintiles, ranging from 32% to 34%.

Figure 2 Trends in unmet need, modern contraceptive use, and percentage of demand satisfied with modern methods, 2007—2019-20

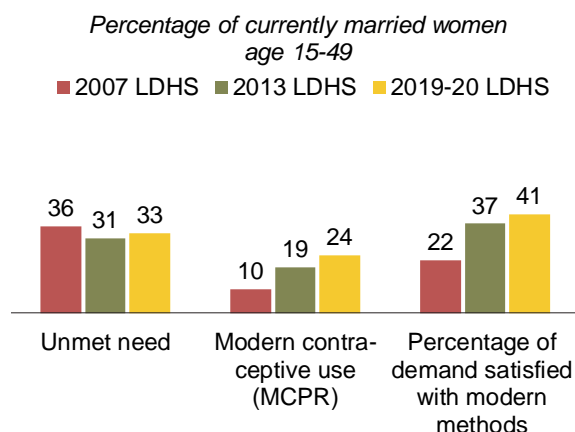


Figure 2 shows trends in unmet need, modern contraceptive use, and percentage of demand met with modern methods among currently married women. Unmet need decreased from 36% in 2007 to 31% in 2013 before increasing slightly to 33% in 2019-20. Modern contraceptive use and percentage of demand satisfied with modern methods have both increased since 2007 (from 10% to 24% and from 22% to 41%, respectively).

3.11 EARLY CHILDHOOD MORTALITY

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP 2007). Estimates of childhood mortality are based on information collected in the birth history section of the Woman's Questionnaire, which includes questions about women's childbearing experience including the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died. For each live birth reported in the birth history, information was collected on name, date of birth, sex, whether the birth was single or multiple, and survivorship. For living children, information was also collected on age at last birthday and whether the child resided with her or his mother. For children who had died, the respondent was asked to provide the age at death. Mortality rates for

specific periods preceding the survey were calculated using direct estimation procedures and are shown in Table 11.

This information is used to directly estimate the following five mortality rates:

- **Neonatal mortality:** the probability of dying within the first month of life
- **Postneonatal mortality:** the probability of dying after the first month of life but before the first birthday (the difference between infant and neonatal mortality)
- **Infant mortality:** the probability of dying before the first birthday
- **Child mortality:** the probability of dying between the first and the fifth birthday
- **Under-5 mortality:** the probability of dying between birth and the fifth birthday

All rates are expressed per 1,000 live births except for child mortality, which is expressed per 1,000 children surviving to age 12 months.

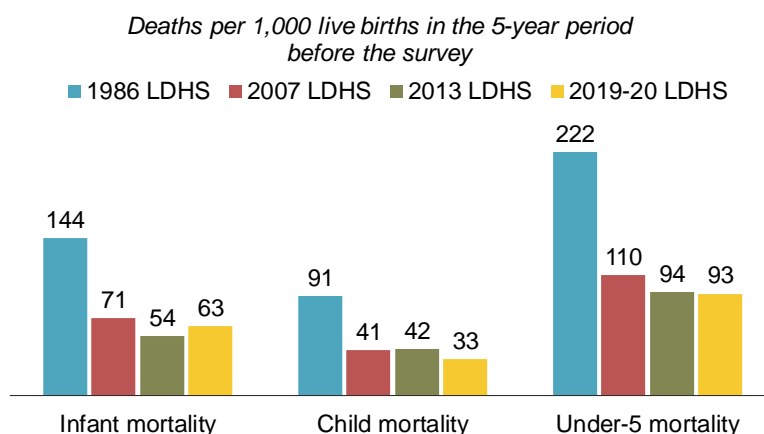
Table 11 presents early childhood mortality rates for the 15 years preceding the survey. Under-5 mortality for the period 0-4 years before the survey (which corresponds approximately to the calendar years 2015-2019) is 93 deaths per 1,000 live births. Most of the mortality occurs during the first year of life, as the infant mortality rate is 63 deaths per 1,000 live births, while mortality between the first and the fifth birthday is 33 deaths per 1,000 children. Mortality during the first month (neonatal mortality) is higher than postneonatal mortality (37 deaths per 1,000 births versus 25 deaths per 1,000 births) and accounts for 59% of overall infant mortality.

Years preceding the survey	Neonatal mortality (NN)	Post-neonatal mortality (PNN) ¹	Infant mortality (${}_1q_0$)	Child mortality (${}_4q_1$)	Under-5 mortality (${}_5q_0$)
0-4	37	25	63	33	93
5-9	36	34	70	36	103
10-14	36	42	78	39	114

¹ Computed as the difference between the infant and neonatal mortality rates

Another way to look at trends in mortality levels is to compare estimates from surveys conducted at different points in time. Results from the 2019-20 LDHS and the previous three LDHS surveys are presented in Figure 3. Trends from the previous surveys generally show a decline in child and under-5 mortality within the range of 0-4 years preceding each respective survey. The data show an increase in infant mortality since the 2013 LDHS; this increase is predominantly due to the rise in neonatal mortality from 26 deaths per 1,000 children in 2013 to 37 deaths per 1,000 children in 2019-20.

Figure 3 Trends in early childhood mortality rates, 1986—2019-20



The 2019-20 LDHS final report will explore the potential reasons for this high neonatal mortality level in more detail.

3.12 MATERNAL CARE

Proper care during pregnancy and delivery is important for the health of both the mother and the baby. In the 2019-20 LDHS, women who had given birth in the 5 years preceding the survey were asked a number of questions about maternal care. Mothers were asked whether they had obtained prenatal care during the pregnancy for their most recent live birth in the 5 years preceding the survey. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. In addition, questions were asked about postnatal care for the most recent birth. Table 12 summarizes information on the coverage of these maternal health services.

3.12.1 Prenatal care

Prenatal care from a skilled provider is important to monitor pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy, at delivery, and during the postnatal period (within 42 days after delivery). In Liberia, skilled providers trained to assist during delivery include doctors, nurses, midwives, and physician assistants.

Table 12 shows that 98% of mothers reported receiving prenatal care from a health professional at least once for their most recent birth in the 5-year period before the survey, which is slightly higher than the 96% figure reported in 2013. This indicator is almost uniformly high among mothers regardless of background characteristics. Nevertheless, women with no education, those in the poorest wealth quintile, and those living in Margibi, Sinoe, and Grand Kru counties are slightly less likely to report receiving prenatal care from a skilled provider than other women.

Overall, 87% of women had four or more prenatal care visits, a large increase from the 56% in the 2013 LDHS. Urban women were slightly more likely than rural women to have had four or more prenatal care visits (89% and 85%, respectively). Among the counties, the proportions of women with at least four prenatal care visits were lowest in Gbarpolu, Sinoe, and Grand Kru (72%-74%) and highest in River Gee and Bomi (93% each). The percentage of women with four or more prenatal care visits generally increases with increasing education and wealth.

3.12.2 Tetanus toxoid vaccination

Tetanus toxoid injections are given to women during pregnancy to protect infants from neonatal tetanus, a cause of infant death due primarily to unsanitary conditions at childbirth. Full protection is considered to be provided to an infant if the mother received two injections during the pregnancy of her last birth or two or more injections (the last within 3 years of the last birth), three or more injections (the last within 5 years of the last birth), four or more injections (the last within 10 years of the last birth), or five or more injections prior to the last birth. Eighty-three percent of women received the number of tetanus toxoid injections required to provide full protection for their most recent birth in the 5 years preceding the survey. Women in the South Eastern A region are less likely than women in other regions to be fully protected against tetanus (77% versus 82%-84%). By county, the proportion of women who have received full protection is lowest in River Cess and Gbarpolu (70% each) and highest in Lofa (92%). Women with no education or a higher education are slightly less likely to have received full protection against neonatal tetanus than women with an elementary or high school education. There is no clear pattern according to wealth in the percentage of women who are fully protected.

Table 12 Maternal care indicators

Among women age 15-49 who had a live birth in the 5 years preceding the survey, percentage who received prenatal care from a skilled provider for the most recent live birth, percentage with four or more prenatal care visits for the most recent live birth, and percentage whose most recent live birth was protected against neonatal tetanus; among all live births in the 5 years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the 2 years preceding the survey, percentage who received a postnatal check during the first 2 days after giving birth, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Women who had a live birth in the 5 years preceding the survey				Live births in the 5 years preceding the survey			Women who had a live birth in the 2 years preceding the survey	
	Percentage receiving prenatal care from a skilled provider ¹	Percentage with 4+ prenatal care visits	Percentage whose most recent live birth was protected against neonatal tetanus ²	Number of women	Percentage delivered by a skilled provider ¹	Percentage delivered in a health facility	Number of births	Percentage with a postnatal check during the first 2 days after birth ³	Number of women
Mother's age at birth									
<20	98.6	86.2	82.0	801	84.4	80.6	1,129	74.5	441
20-34	97.8	88.0	83.2	2,530	84.7	79.6	3,320	81.0	1,306
35-49	96.9	86.1	82.0	695	83.1	79.8	815	80.4	349
Residence									
Urban	98.2	89.3	83.2	2,269	89.2	83.4	2,804	78.2	1,129
Greater Monrovia	98.1	87.7	82.7	1,185	86.8	76.4	1,417	74.7	574
Other urban	98.4	91.1	83.8	1,084	91.7	90.5	1,388	81.8	555
Rural	97.4	84.6	82.2	1,757	78.9	75.8	2,459	81.1	967
Region									
North Western	98.3	87.6	84.2	331	78.1	74.1	464	81.1	184
South Central	97.1	86.3	82.0	1,825	80.2	72.0	2,296	77.1	926
South Eastern A	95.8	83.2	77.4	248	83.6	81.4	333	87.2	140
South Eastern B	97.2	82.9	83.9	222	81.2	79.6	290	74.4	112
North Central	99.1	90.0	84.2	1,400	91.7	90.5	1,880	81.5	733
County									
Bomi	98.1	92.6	88.8	119	84.0	78.7	152	86.9	58
Bong	98.4	88.2	80.7	443	86.8	83.7	568	83.3	231
Gbarpolu	98.1	71.9	70.4	67	51.1	50.1	95	65.9	37
Grand Bassa	95.7	82.4	74.3	264	71.2	62.1	382	77.9	151
Grand Cape Mount	98.6	90.8	86.8	145	85.9	81.5	217	83.5	90
Grand Gedeh	95.6	89.4	85.9	90	89.3	87.6	120	84.1	53
Grand Kru	95.0	74.0	71.5	80	72.1	73.5	104	66.6	43
Lofa	100.0	91.4	91.5	317	97.3	96.2	408	86.0	172
Margibi	94.2	82.3	81.7	217	75.1	72.6	281	87.3	119
Maryland	98.4	85.5	90.9	100	83.6	80.0	134	76.7	48
Montserrado	97.9	87.7	83.5	1,344	83.2	74.2	1,633	75.1	656
Nimba	99.2	90.5	83.0	640	92.2	92.3	905	78.0	330
River Cess	98.0	91.0	69.5	58	85.3	85.3	80	93.9	32
River Gee	98.3	93.3	90.9	42	92.9	90.9	52	84.6	22
Sinoe	94.8	73.1	74.3	100	77.4	73.5	133	86.2	55
Mother's education									
No education	96.8	85.7	81.7	1,366	81.4	76.1	1,875	78.2	683
Elementary	98.4	85.1	82.8	984	83.6	78.5	1,350	79.6	565
Junior high	97.6	88.1	83.1	725	85.3	81.7	929	81.9	381
Senior high	98.7	90.6	84.6	782	89.6	85.5	912	80.3	388
Higher	99.9	93.3	81.6	170	90.1	89.0	198	(75.6)	78
Wealth quintile									
Lowest	96.4	82.5	79.2	855	76.4	73.9	1,258	79.6	507
Second	98.3	87.6	84.3	849	84.2	82.5	1,159	80.8	444
Middle	96.8	86.6	81.7	785	86.0	81.6	989	79.1	394
Fourth	98.3	89.2	85.3	816	84.8	78.5	1,004	76.4	411
Highest	99.7	91.3	83.4	721	93.9	84.4	854	82.1	340
Total	97.8	87.3	82.8	4,026	84.4	79.8	5,263	79.5	2,096

Notes: If more than one source of assistance was mentioned, only the provider with the highest qualifications is considered in this tabulation. Figures in parentheses are based on 25-49 unweighted cases.

¹ Skilled provider includes doctor, nurse, midwife, and physician assistant.

² Includes mothers with two injections during the pregnancy of their most recent live birth, or two or more injections (the last within 3 years of the most recent live birth), or three or more injections (the last within 5 years of the most recent live birth), or four or more injections (the last within 10 years of the most recent live birth), or five or more injections at any time prior to the last live birth

³ Includes women who received a check from a doctor, midwife, nurse, community health worker, or traditional birth attendant

3.12.3 *Delivery care*

Access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother and/or baby (Van Lerberghe and De Brouwere 2001; WHO 2006). Table 12 shows that a majority of births (84%) in Liberia are assisted by a skilled medical professional. This is a considerable increase from the 2013 LDHS, when only 61% of births were attended by a skilled provider. Assistance at delivery by a skilled provider is more common in urban (89%) than rural (79%) areas. There is a good deal of variation between regions and counties. Among regions, assistance at delivery is highest in North Central (92%) and lowest in North Western (78%). In the counties, delivery by a skilled provider ranges from 51% in Gbarpolu to 97% in Lofa. As expected, there is a positive relationship between mother's education and assistance at delivery; 81% of women with no education are assisted by a skilled medical professional, as compared with 90% of those with a higher education. Assistance at delivery generally increases with increasing wealth, from 76% among the poorest women to 94% among those in the highest wealth quintile.

Table 12 also shows that 80% of births occur in health facilities. Again, this percentage is considerably higher than in 2013, when 56% of births occurred in facilities.

Facility deliveries vary according to residence, region, and county. Overall, the percentage of facility deliveries is higher in urban areas than in rural areas (83% and 76%, respectively). Among regions, facility deliveries are least common in South Central (72%) and most common in North Central (91%). By county, the proportion of facility deliveries is lowest in Gbarpolu (50%) and highest in Lofa (96%). The proportion of women who deliver in a health facility increases with increasing education, from 76% among those with no education to 89% among those with a higher education. There is no clear relationship between facility deliveries and wealth.

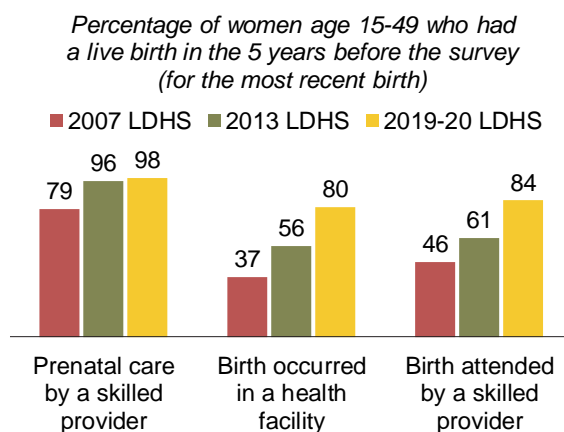
3.12.4 *Postnatal care for the mother*

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Thus, prompt postnatal care for both the mother and the child is important to treat any complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. Safe motherhood programs recommend that all women receive a check of their health within 2 days after delivery.

Overall, 80% of women with a birth in the 2 years preceding the survey received postnatal care within 2 days after delivery, representing an increase from 71% in 2013. As shown in Table 12, women in rural areas are slightly more likely than those in urban areas to receive timely postnatal care (81% versus 78%). By region, women in South Eastern B are least likely to receive postnatal care (74%), while women in South Eastern A are most likely to receive care (87%). Timely postnatal care is most common in River Cess County (94%) and least common in Gbarpolu County (66%) and Grand Kru County (67%). There is little variation in the proportion of women who receive postnatal care within 2 days after delivery by education and household wealth.

Figure 4 shows trends in maternal health care from the 2007 LDHS to the 2019-20 LDHS. The percentage of women receiving prenatal care from a skilled provider increased from 79% in 2007 to 98% in 2019-20. The proportion of women whose births occurred in a health facility more than doubled over the same period, from 37% to 80%. Similarly, the proportion of women whose births were attended by a skilled provider increased from 46% to 84%.

Figure 4 Trends in maternal health care, 2007—2019-20



3.13 CHILD HEALTH AND NUTRITION

The 2019-20 LDHS collected data on a number of key child health indicators, including vaccinations of young children, infant feeding practices, and treatment practices when a child is ill.

3.13.1 Vaccination of children

Universal immunization of children against common vaccine-preventable diseases is crucial in reducing infant and child mortality. In Liberia, routine childhood vaccines include BCG vaccine (tuberculosis), DPT-HepB-Hib or pentavalent vaccine (diphtheria, tetanus, pertussis, hepatitis B, and *Haemophilus influenzae* type b), oral polio vaccine or OPV (poliomyelitis), inactivated polio vaccine or IPV (poliomyelitis), pneumococcal vaccine, rotavirus vaccine, measles vaccine, and yellow fever vaccine.

In Liberia, the BCG vaccine is usually given immediately after birth. A birth dose of the oral polio vaccine (polio 0) is given within 7 days after birth, while the first two doses of the pentavalent, pneumococcal, rotavirus, and oral polio vaccines (excluding polio 0) are given at approximately age 6 and 10 weeks. The third doses of the pentavalent, pneumococcal, and oral polio vaccines are given at 14 weeks, at which time IPV is also given.¹ The measles vaccination and yellow fever vaccination should be given at age 9 months.

The 2019-20 LDHS collected information on vaccinations for all children born in the 3 years before the survey. For each of these children, mothers were asked whether they had a health card for the child and, if so, whether the interviewer could see it. When a mother was able to show the health card to the interviewer, the dates of vaccinations received were copied from the card to the questionnaire. If a child never received a health card or if the mother was unable to show the card to the interviewer, the mother was asked specific questions about whether the child had received each vaccine. In the 2019-20 LDHS, a health card was observed for 65% of the children age 12-23 months and 51% of the children age 24-35 months for whom vaccination information was obtained (data not shown). Thus, the data presented below on vaccination coverage are based on both information taken from the health cards and information obtained from mothers' reports.

According to the guidelines developed by the World Health Organization, children are considered to have received all basic vaccinations if they have received the BCG vaccine, three doses of DPT-containing vaccine (given in Liberia as pentavalent), three doses of polio vaccine (excluding the oral polio vaccine given at birth), and a vaccination against measles.

A second critical measure of vaccination coverage is the proportion of children age 12-23 months and 24-35 months who have received all age-appropriate vaccinations. The Liberian immunization program

¹ Liberia is slowly rolling out the third rotavirus dose, and nationwide roll out was not complete by the start of data collection. As a result, information on the third rotavirus dose was collected for programmatic purposes but was excluded from the tabulation.

considers a child to have received all age-appropriate vaccinations if the child has all basic vaccines along with a birth dose of OPV, IPV, three doses of pneumococcal vaccine, two doses of rotavirus vaccine, and the yellow fever vaccine.²

Table 13 presents data on vaccination coverage among children age 12-23 months and 24-35 months according to background characteristics. The table shows that 65% of children age 12-23 months have received all basic vaccinations, while only 40% have received all age-appropriate vaccinations.³ Six percent of children age 12-23 months have not received any vaccinations. Among children age 24-35 months, 31% have received all age-appropriate vaccinations.³

Among children age 12-23 months, basic vaccination coverage is higher among boys than among girls (67% versus 63%). In addition, basic coverage is higher in urban than rural areas (66% versus 63%) and higher among children whose vaccination card was seen than among those whose card was not seen (85% versus 28%). Basic vaccination coverage is lowest in the South Eastern A region (54%) and highest in the North Western region (72%). By county, basic coverage is highest in Lofa (78%) and lowest in Sinoe (46%). Coverage rates do not exhibit a strong relationship with either mother's education or household wealth other than being lowest among children in the poorest households. In the case of multi-dose vaccines, coverage rates are highest for the first dose and decline for subsequent doses.

Overall, basic vaccination coverage among children age 12-23 months has improved since the 2013 LDHS, rising 10 percentage points from 55% to 65%.

² Following data collection, a skip error was identified that impacted yellow fever vaccination rates according to mothers' recall.

³ Because of the skip error that affected data collection for the yellow fever vaccination indicator, the "all age-appropriate vaccinations" indicator excludes some yellow fever vaccination data gathered from mothers' recall.

Table 13—Continued

Background characteristic	Children age 12-23 months															Children age 24-35 months							
	DPT-HepB-Hib					OPV ¹			Pneumococcal			Rotavirus		Measles	Yellow fever ²	All basic vacci-nations ³	All age-appropriate vacci-nations ⁴	No vacci-nations	Number of children	Number of children			
	1	2	3	0	1	2	3	1	2	3	1	2											
Mother's education	BCG																						
No education	86.9	87.6	79.6	82.7	85.1	76.3	63.4	67.9	86.0	76.8	66.2	86.7	75.0	83.1	63.3	62.6	40.9	8.8	313	313	27.6	313	
Elementary	91.8	91.3	86.0	84.7	90.1	79.9	66.8	74.4	85.5	80.1	68.8	87.6	78.2	84.7	64.7	65.5	36.8	4.9	276	276	35.9	236	
Junior high	93.3	94.3	83.7	89.5	85.0	76.4	56.1	78.0	90.9	81.3	69.6	90.3	79.7	91.6	76.6	66.9	35.6	3.5	174	174	26.7	178	
Senior high	91.2	94.9	85.4	89.5	85.0	75.9	59.8	81.3	93.0	74.8	68.3	91.3	75.7	94.1	84.6	60.7	39.3	4.9	147	147	38.3	125	
Higher	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	21
Wealth quintile																							
Lowest	86.7	88.6	77.3	80.7	84.6	70.7	54.7	67.0	85.0	73.2	60.3	86.2	69.1	79.9	59.4	53.3	30.4	6.5	258	258	27.5	198	
Second	92.6	92.3	88.5	74.7	83.3	91.0	82.4	67.7	90.1	80.3	73.3	90.5	81.4	89.1	69.9	70.8	41.2	5.5	191	191	31.7	201	
Middle	91.1	91.3	87.4	72.2	88.2	84.8	65.6	78.2	89.8	81.3	66.1	90.0	80.7	89.5	71.1	69.2	38.2	7.5	172	172	27.8	159	
Fourth	89.3	89.3	82.0	69.7	86.9	73.5	64.0	72.0	86.7	81.0	72.0	83.8	77.6	88.7	77.6	66.9	42.6	7.3	192	192	34.3	152	
Highest	96.9	99.8	84.7	75.7	99.0	87.8	69.3	89.4	92.6	79.6	76.2	97.5	80.1	95.3	83.5	69.0	52.8	0.0	123	123	36.8	162	
Total	90.6	91.4	83.4	69.2	86.1	77.6	63.2	74.8	88.3	78.6	68.5	88.8	76.9	87.4	70.6	64.7	39.5	5.8	937	937	31.4	873	

Note: Children are considered to have received the vaccine if it was either written on the child's vaccination card or reported by the mother. For children whose vaccination information is based on the mother's report, date of vaccination is not collected. The proportions of vaccinations given during the first and second years of life are assumed to be the same as for children with a written record of vaccination. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

- BCG = Bacille Calmette-Guérin
- DPT = Diphtheria-pertussis-tetanus
- Hib = *Haemophilus influenzae* type b
- OPV = Oral polio vaccine
- IPV = Inactivated polio vaccine
- ¹ Polio 0 is the polio vaccination given at birth.
- ² Following data collection, a skip error was identified that impacted yellow fever vaccination rates according to mother's recall.
- ³ BCG, three doses of DPT-HepB-Hib, three doses of oral polio vaccine (excluding polio vaccine given at birth), and one dose of measles
- ⁴ BCG, three doses of DPT-HepB-Hib, four doses of oral polio vaccine, one dose of inactivated polio vaccine, three doses of pneumococcal vaccine, two doses of rotavirus vaccine, and one dose of measles and yellow fever. Because of the skip error that affected the data collection for the yellow fever vaccination indicator, the "all age-appropriate vaccinations" indicator excludes some yellow fever vaccination data by mother's recall.

3.13.2 Treatment of childhood illnesses

Pneumonia and other acute respiratory infections (ARIs), fever, and dehydration from diarrhea are important contributing causes of childhood morbidity and mortality in developing countries (WHO 2003). Therefore, prompt medical attention when a child has symptoms of these illnesses is crucial in reducing childhood deaths. To obtain information on health-seeking behaviors surrounding these common childhood illnesses, mothers were asked if any of their children under age 5 had experienced the following symptoms in the 2 weeks preceding the survey: a cough accompanied by short, rapid breathing or difficulty breathing as a result of a chest-related problem (symptoms of acute respiratory infection); a fever; or an episode of diarrhea. Mothers who indicated that their child had experienced such symptoms were then asked if treatment or advice was sought from a health facility or provider. For children with diarrhea, the mother was asked additional questions about treatment given to the child. Note that the morbidity data collected are subjective, that is, they are based on the mother's perception of illness with no validation from medical personnel. In addition, the prevalence of these illnesses may fluctuate with changes of seasons. Overall, 4% of children under age 5 showed symptoms of ARI, 25% exhibited fever, and 16% experienced diarrhea in the 2 weeks preceding the survey (data not shown).

Table 14 shows that treatment from a health facility or provider was sought for 78% of children with symptoms of ARI⁴, 81% of children with fever symptoms, and 66% of children with diarrhea. Fifty-six percent of children with diarrhea received fluid from an oral rehydration salt (ORS) packet or government-recommended homemade fluids, 23% were given zinc supplements, and 18% were given both ORS/government-recommended homemade fluids and zinc supplements.

Whether advice or treatment was sought varied by background characteristics and symptoms. Male children were more likely than female children to be taken to a health facility or health provider for treatment of fever (82% versus 80%) and treatment of diarrhea (69% versus 63%). Similarly, children of urban mothers were more likely than children of rural mothers to be taken for treatment for fever (87% versus 74%) and diarrhea (71% versus 62%). Children in the North Central region were less likely to be taken for treatment for fever (74%) and diarrhea (62%) than children in other regions. Treatment seeking generally increases with increasing mother's education and household wealth.

Use of ORS/government-recommended homemade fluids is lowest among children in the North Central region (48%), as is use of zinc supplements (12%). While use of appropriate fluids for diarrhea does not relate to mother's education or household wealth, zinc supplementation generally increases by these two background characteristics. However, differences according to background characteristics for some categories should be interpreted with caution as the estimates are based on small numbers of children who had symptoms of fever or diarrhea.

⁴ Symptoms of ARI include short, rapid breathing that is chest-related and/or difficult breathing that is chest-related.

Table 14 Treatment for acute respiratory infection, fever, and diarrhea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or had a fever in the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, and among children under age 5 who had diarrhea during the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, percentage given a fluid made from oral rehydration salt (ORS) packets or given government-recommended homemade fluids, percentage given zinc, and percentage given ORS and zinc, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Children with symptoms of ARI ¹		Children with fever		Children with diarrhea				
	Percentage for whom advice or treatment was sought ²	Number of children	Percentage for whom advice or treatment was sought ²	Number of children	Percentage for whom advice or treatment was sought ²	Percentage given fluid from ORS packet or government-recommended homemade fluids	Percentage given zinc	Percentage given ORS/ recommended homemade fluids and zinc	Number of children
Age in months									
<6	(81.8)	30	80.9	126	57.1	14.7	13.2	4.4	66
6-11	(64.9)	46	80.3	168	67.9	52.4	27.0	19.7	122
12-23	78.3	53	79.6	267	69.1	63.7	31.5	24.8	237
24-35	(84.4)	35	78.2	225	63.3	55.7	15.8	12.8	139
36-47	(85.5)	35	86.2	227	68.0	60.4	18.5	16.9	135
48-59	(83.1)	16	80.1	205	65.2	66.4	23.7	19.2	63
Sex									
Male	81.4	100	82.1	611	69.1	56.6	24.8	18.5	386
Female	75.8	115	79.7	606	63.4	55.0	21.9	17.8	377
Residence									
Urban	76.3	101	87.1	619	71.1	55.3	28.2	21.8	373
Greater Monrovia	*	63	90.3	316	67.1	54.3	36.4	26.7	191
Other urban	(87.7)	38	83.8	304	75.4	56.3	19.6	16.6	182
Rural	80.3	115	74.4	597	61.6	56.3	18.7	14.7	391
Region									
North Western	(71.9)	16	80.4	148	72.8	73.0	33.1	29.2	72
South Central	75.8	102	84.4	562	65.4	56.7	29.2	21.9	357
South Eastern A	(89.2)	14	85.5	102	71.3	58.9	20.7	15.8	64
South Eastern B	82.9	18	77.7	89	73.8	55.8	20.1	16.0	49
North Central	80.3	66	74.3	315	62.3	47.8	12.1	9.6	220
County									
Bomi	*	2	91.6	61	(67.2)	(75.5)	(35.4)	(35.4)	21
Bong	(83.6)	33	73.9	138	59.6	42.1	14.5	11.6	96
Gbarpolu	*	8	64.8	30	(63.6)	(73.0)	(33.4)	(30.4)	14
Grand Bassa	*	14	74.5	101	62.3	52.3	27.4	20.7	84
Grand Cape Mount	*	6	76.6	57	(79.6)	(71.7)	(31.7)	(25.2)	37
Grand Gedeh	*	6	85.8	33	(64.2)	(66.1)	(33.4)	(25.4)	21
Grand Kru	*	7	74.4	21	(71.4)	(47.0)	(15.4)	(10.1)	11
Lofa	*	16	(77.9)	43	(67.6)	(55.8)	(4.3)	(4.3)	26
Margibi	*	5	89.2	87	74.4	72.4	20.4	15.9	42
Maryland	*	7	77.2	50	79.1	56.9	26.5	23.2	28
Montserrado	(72.2)	82	85.9	375	64.9	55.5	31.5	23.5	231
Nimba	*	16	73.6	135	63.7	51.3	11.9	9.1	99
River Cess	*	5	90.0	27	77.9	75.1	20.7	17.2	15
River Gee	*	5	82.5	19	62.0	62.1	7.7	2.7	10
Sinoe	*	3	82.4	42	73.2	45.2	11.4	8.0	29
Mother's education									
No education	70.6	73	75.9	403	58.4	55.2	18.0	14.7	250
Elementary	87.5	53	78.8	317	67.5	56.9	21.6	16.7	222
Junior high	(66.0)	30	82.8	220	75.2	62.3	24.2	22.5	151
Senior high	(80.6)	42	88.3	240	67.4	45.1	23.7	16.6	105
Higher	*	17	*	36	*	*	*	*	35
Wealth quintile									
Lowest	70.7	62	70.5	271	57.6	56.5	19.1	15.7	195
Second	84.3	40	76.5	270	60.9	57.2	17.3	13.9	163
Middle	71.6	33	75.4	208	70.0	53.8	19.7	16.2	146
Fourth	(74.6)	39	89.1	252	79.4	56.8	21.6	18.1	147
Highest	*	40	95.1	216	67.0	53.9	46.8	31.3	112
Total	78.4	216	80.9	1,217	66.3	55.8	23.4	18.2	763

Notes: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Symptoms of ARI include short, rapid breathing that is chest-related and/or difficult breathing that is chest-related.

² Excludes advice or treatment from a traditional practitioner

3.13.3 Nutritional status of children

Anthropometric indicators for young children based on weight (kg) and height/length (cm) were collected in the 2019-20 LDHS to provide outcome measures of nutritional status. As recommended by WHO, evaluation of nutritional status is based on a comparison between three indices for the children in this survey with indices reported for a reference population of well-nourished children. The three indices (height-for-age, weight-for-height, and weight-for-age) are expressed as standard deviation (SD) units from the median for the reference group (WHO Multicentre Growth Reference Study Group 2006).

A total of 3,138 children (unweighted) under age 5 were eligible for weight and height measurements. For some of the eligible children, however, complete and credible data on height, weight, and/or age were not obtained. In this report, height-for-age and weight-for-height data are based on 94% of eligible children, while weight-for-age data are based on 95% of eligible children.

Table 15 and Figure 5 show nutritional status for children under age 5 according to the three anthropometric indices. Height-for-age is a measure of linear growth. Children whose height-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age, or stunted. Stunting may result from poor diet and recurrent infections or chronic diseases. Children whose height-for-age falls below minus three standard deviations (-3 SD) from the median of the reference population are considered severely stunted. The 2019-20 LDHS results show that 30% of children under age 5 are stunted (below -2 SD), and 10% are severely stunted (below -3 SD). Boys are more likely to be stunted (32%) than girls (28%). Children residing in urban areas are less likely to be stunted than those living in rural areas (25% and 35%, respectively). Stunting is lower in the South Central region (25%) than in the other regions (33%-34%). Among the counties, the prevalence of stunting is highest in River Cess (41%) and lowest in Montserrado (21%). The prevalence of stunting decreases with increasing mother's education and household wealth.

Children whose weight-for-height is below minus two standard deviations (-2 SD) from the median of the reference population are considered wasted (or thin), while those whose weight-for-height falls below minus three standard deviations (-3 SD) from the median are considered severely wasted. Wasting may result from inadequate food intake or from a recent episode of illness or infection causing acute weight loss. Three percent of Liberian children are wasted, and 1% are severely wasted (-3 SD). There is no variation in wasting between children in urban and rural areas (3% each). Also, wasting is similar among boys (4%) and girls (3%). There is no clear relationship between the prevalence of wasting and mother's education; however, wasting increases with increasing wealth before dropping among children in the highest wealth quintile.

Table 15 also shows the proportion of children whose weight-for-height is more than two standard deviations (+2 SD) above the reference median. These children are considered overweight. Overweight results from an imbalance between energy consumed (too much) and energy expended (too little). Four percent of children under age 5 fall into this category. While there is generally little difference between the proportions of children who are heavy for their height across the various background characteristics, there is some regional variation. For instance, 6% of children in North Central are overweight, as compared with only 2% in South Eastern A. The proportion of children who are overweight is highest in River Gee County (11%) and lowest in Grand Gedeh and Grand Kru counties (both 1%).

Children whose weight-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered underweight, and those below minus three standard deviations (-3 SD) from the median are considered severely underweight. Underweight is a composite index of weight-for-height and height-for-age that reflects children who are stunted, wasted, or both. As shown in Table 15, 11% of Liberian children are underweight, with 3% classified as severely underweight. The proportion of underweight children varies by residence, with 13% of children in rural areas and 9% in urban areas being underweight. By region, the proportion of children who are underweight ranges from 9% in North Central to 16% in North Western. The proportion of children who are underweight is highest in River Cess County (20%) and lowest in River Gee County (7%).

Table 15 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Height-for-age ¹				Weight-for-height					Weight-for-age				
	Percent-age below -3 SD	Percent-age below -2 SD ²	Mean Z-score (SD)	Number of children	Percent-age below -3 SD	Percent-age below -2 SD ²	Percent-age above +2 SD	Mean Z-score (SD)	Number of children	Percent-age below -3 SD	Percent-age below -2 SD ²	Percent-age above +2 SD	Mean Z-score (SD)	Number of children
Age in months														
<6	3.6	21.4	-0.9	274	0.5	3.3	18.7	0.7	279	1.2	5.1	5.2	-0.2	280
6-8	3.2	12.7	-0.8	181	0.9	6.2	4.0	-0.2	182	0.9	8.6	0.6	-0.6	183
9-11	8.7	24.5	-1.4	150	2.1	8.0	5.7	-0.4	151	6.1	15.7	1.6	-1.1	151
12-17	7.4	26.4	-1.3	281	0.9	7.6	4.0	-0.3	282	3.1	13.5	1.7	-0.8	282
18-23	9.7	31.2	-1.5	241	1.1	4.1	3.4	0.0	241	5.1	10.7	2.2	-0.7	241
24-35	16.7	41.3	-1.6	514	0.3	3.3	1.6	0.1	515	3.7	15.7	0.5	-0.8	514
36-47	13.7	35.4	-1.5	599	0.1	1.9	2.6	0.1	604	3.3	11.1	0.2	-0.8	604
48-59	7.5	25.6	-1.2	572	0.2	0.6	2.0	0.1	569	1.2	7.3	0.8	-0.7	574
Sex														
Male	11.7	31.8	-1.4	1,386	0.6	3.6	4.5	0.1	1,399	3.0	11.4	0.9	-0.8	1,401
Female	8.6	27.9	-1.2	1,425	0.4	3.2	4.2	0.0	1,424	2.7	10.4	1.7	-0.7	1,427
Mother's interview status														
Interviewed	8.8	28.9	-1.3	2,310	0.5	3.7	4.5	0.0	2,320	2.7	10.3	1.1	-0.7	2,326
Not interviewed but in household	3.8	19.3	-0.7	58	0.0	0.7	9.9	0.3	58	0.0	7.2	9.2	-0.2	58
Not interviewed, not in household ³	17.5	36.0	-1.5	444	0.7	2.0	3.0	0.1	445	4.3	14.4	1.3	-0.8	444
Residence														
Urban	8.8	25.0	-1.2	1,463	0.2	3.4	4.7	0.0	1,468	2.1	9.2	1.6	-0.7	1,470
Greater Monrovia	6.4	18.7	-1.1	731	0.0	4.2	3.3	-0.1	734	2.5	9.9	1.3	-0.7	736
Other urban	11.2	31.2	-1.4	732	0.4	2.5	6.0	0.2	734	1.6	8.5	2.0	-0.6	734
Rural	11.5	35.1	-1.5	1,348	0.9	3.4	4.0	0.1	1,354	3.7	12.7	0.9	-0.8	1,359
Region														
North Western	10.4	32.8	-1.4	254	1.9	5.0	3.3	-0.1	254	3.6	15.9	0.7	-0.9	257
South Central	8.4	24.6	-1.2	1,172	0.3	3.8	3.5	-0.1	1,177	2.6	10.7	1.0	-0.8	1,176
South Eastern A	9.5	33.5	-1.4	194	0.8	3.8	2.3	-0.0	194	4.0	12.6	0.2	-0.9	195
South Eastern B	10.7	34.0	-1.5	156	0.9	4.7	3.8	0.1	157	2.3	12.2	1.2	-0.8	157
North Central	12.0	33.7	-1.4	1,036	0.3	2.2	6.1	0.3	1,040	2.9	9.3	1.9	-0.6	1,044
County														
Bomi	9.1	32.4	-1.4	91	2.7	5.7	1.8	-0.1	92	4.1	14.2	0.9	-0.9	93
Bong	11.4	37.4	-1.5	321	1.1	2.8	7.5	0.3	322	0.9	9.3	0.6	-0.6	322
Gbarpolu	15.3	34.3	-1.4	52	0.0	4.6	5.8	0.0	52	3.6	15.3	1.4	-0.8	52
Grand Bassa	14.6	34.7	-1.6	198	0.9	3.4	2.9	-0.0	198	2.8	12.4	0.0	-0.9	198
Grand Cape Mount	9.3	32.5	-1.3	111	2.1	4.6	3.5	-0.2	110	3.1	17.7	0.3	-0.9	112
Grand Gedeh	12.4	31.9	-1.3	66	0.3	4.8	1.1	-0.1	66	5.4	11.5	0.7	-0.8	67
Grand Kru	8.4	32.6	-1.4	54	0.0	1.2	1.3	0.1	55	2.0	14.7	1.2	-0.8	54
Lofa	12.5	35.0	-1.5	214	0.0	1.2	6.1	0.4	216	2.8	8.0	1.4	-0.6	216
Margibi	9.9	33.8	-1.4	143	1.0	5.0	5.4	-0.0	144	3.9	14.2	2.1	-0.8	143
Maryland	12.0	36.3	-1.6	72	2.0	8.0	2.5	-0.0	73	2.6	12.5	0.9	-1.0	73
Montserrado	6.7	20.7	-1.1	831	0.0	3.7	3.3	-0.1	835	2.3	9.6	1.1	-0.7	835
Nimba	12.1	30.7	-1.3	501	0.0	2.3	5.1	0.2	503	4.1	10.0	3.0	-0.6	506
River Cess	12.7	40.6	-1.6	52	1.5	4.9	1.5	-0.3	52	4.0	19.5	0.0	-1.1	52
River Gee	11.7	31.0	-1.4	30	0.0	3.3	11.4	0.3	30	2.0	7.2	1.8	-0.6	30
Sinoe	4.8	30.0	-1.4	76	0.8	2.2	3.7	0.2	76	2.8	8.7	0.0	-0.7	76
Mother's education⁴														
No education	9.8	32.2	-1.4	855	0.7	3.3	3.3	0.0	865	3.1	10.9	0.9	-0.8	867
Elementary	10.0	32.3	-1.4	618	0.6	4.6	5.9	0.1	619	2.8	10.2	0.5	-0.7	622
Junior high	8.7	29.8	-1.3	433	0.3	3.2	5.5	-0.0	434	2.3	13.1	1.7	-0.7	434
Senior high	6.6	18.0	-1.1	358	0.2	4.7	3.8	-0.0	357	2.3	8.1	2.0	-0.6	358
Higher	(0.0)	(9.9)	0.4	102	(0.0)	(0.0)	(7.0)	-0.1	102	(0.0)	(0.0)	(5.4)	0.1	102
Wealth quintile														
Lowest	14.0	37.9	-1.5	697	0.5	2.4	3.8	0.1	699	3.4	13.7	1.1	-0.8	702
Second	11.7	34.7	-1.5	619	0.5	2.9	3.7	0.1	621	3.3	9.7	0.9	-0.8	623
Middle	8.2	31.3	-1.4	571	1.3	4.9	6.4	0.2	574	2.4	10.8	1.9	-0.6	577
Fourth	8.5	24.3	-1.2	511	0.0	5.0	4.5	-0.1	515	3.4	12.4	0.5	-0.8	515
Highest	5.6	13.6	-0.9	414	0.0	1.8	3.3	-0.1	414	1.3	6.0	2.4	-0.6	412
Total	10.1	29.8	-1.3	2,811	0.5	3.4	4.4	0.1	2,822	2.9	10.9	1.3	-0.7	2,828

Notes: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards. Total includes one child for whom information on mother's education is missing. Figures in parentheses are based on 25-49 unweighted cases.

¹ Recumbent length is measured for children under age 2; standing height is measured for all other children.

² Includes children who are below -3 standard deviations (SD) from the WHO Child Growth Standards population median

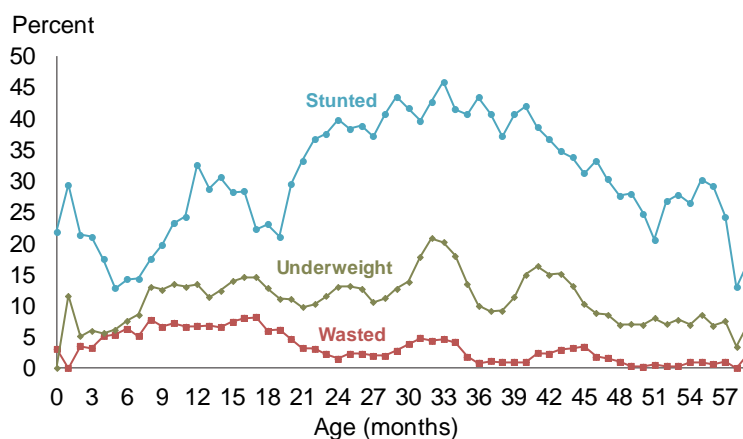
³ Includes children whose mothers are deceased

⁴ For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

A comparison of data on anthropometric measures in the 2013 and 2019-20 LDHS surveys shows that the nutritional status indices of stunting, wasting, and underweight have improved in the last 7 years. Over this period, stunting decreased from 32% to 30%, wasting decreased from 6% to 3%, and the proportion of underweight children decreased from 15% to 11%. The proportion of overweight children has increased since 2013, from 1% to 4%.

The nutritional status of children varies with age, as shown in Figure 5. The prevalence of stunting decreases during the first 5 months of life and then increases until the 12th month. This is followed by a decrease until the 19th month, after which there is a rapid increase and a peak at 46% in the 33rd month. Stunting then decreases gradually until the 48th month, and there is subsequently a sharp drop between the 49th and 51st months. Stunting then increases until the 55th month before dropping sharply.

Figure 5 Nutritional status of children by age



Note: *Stunting* reflects chronic malnutrition; *wasting* reflects acute malnutrition; *underweight* reflects chronic or acute malnutrition or a combination of both. Plotted values are smoothed by a 5-month moving average.

The percentage of children who are wasted or underweight is lower than the percentage who are stunted. The prevalence of wasting ranges from less than 1% to 8%, while the prevalence of underweight ranges from less than 1% to 21%.

3.13.4 Infant and young child feeding practices

Appropriate infant and young child feeding (IYCF) practices include early initiation of breastfeeding (within the first hour of life), exclusive breastfeeding in the first 6 months of life, continued breastfeeding up to age 2 or beyond, introduction of a range of safe solid and semisolid foods at age 6 months, and gradual increases in the amount of food given and frequency of feeding as the child gets older. It is also important for children to receive a diverse diet—eating foods from different food groups to ensure that macronutrient and micronutrient requirements are met (WHO 2008).

The 2019-20 LDHS collected data on infant and young child feeding practices for all children born in the 2 years preceding the survey. Table 16 shows breastfeeding practices by child's age. Contrary to the recommendation that children under age 6 months be exclusively breastfed, only 55% of infants were found to be exclusively breastfed. In addition to breast milk, 22% of infants consume plain water, 2% consume non-milk liquids, 5% consume other milk, and 10% consume complementary foods. Twenty-two percent of infants under age 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child. Seventy-eight percent of children age 12-17 months receive timely complementary foods, and 52% of children age 18-23 months have been weaned.

Exclusive breastfeeding among children younger than age 6 months has remained stable at 55% since the 2013 LDHS. The proportion of children under age 6 months who are not breastfeeding increased from 2% in 2013 to 6% in 2019-20.

Table 16 Breastfeeding status by age

Percent distribution of youngest children under age 2 who are living with their mother by breastfeeding status and percentage currently breastfeeding, and percentage of all children under age 2 using a bottle with a nipple, according to age in months, Liberia DHS 2019-20

Age in months	Breastfeeding status						Total	Percentage currently breastfeeding	Number of youngest children under age 2 living with their mother	Percentage using a bottle with a nipple	Number of all children under age 2
	Not breast-feeding	Exclusively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids ¹	Breast-feeding and consuming other milk	Breast-feeding and consuming complementary foods					
0-1	2.2	72.6	15.0	4.5	1.4	4.3	100.0	97.8	161	15.5	167
2-3	3.9	59.3	21.8	0.5	3.5	11.1	100.0	96.1	201	21.4	204
4-5	11.9	36.6	26.5	2.2	10.2	12.6	100.0	88.1	194	28.6	198
6-8	4.4	6.8	33.1	3.3	8.5	44.0	100.0	95.6	290	21.9	294
9-11	9.4	3.0	18.0	0.7	5.1	63.9	100.0	90.6	233	16.9	235
12-17	13.5	1.1	6.6	0.1	0.5	78.2	100.0	86.5	440	6.3	464
18-23	52.1	0.0	1.8	0.3	1.1	44.6	100.0	47.9	404	5.9	474
0-3	3.1	65.2	18.8	2.3	2.6	8.1	100.0	96.9	361	18.8	371
0-5	6.2	55.2	21.5	2.2	5.2	9.7	100.0	93.8	555	22.2	569
6-9	6.2	6.6	30.0	2.9	7.0	47.2	100.0	93.8	373	21.3	377
12-15	8.4	1.3	5.8	0.0	0.0	84.6	100.0	91.6	285	9.1	300
12-23	32.0	0.6	4.3	0.2	0.8	62.1	100.0	68.0	844	6.1	937
20-23	63.0	0.0	0.8	0.0	1.9	34.3	100.0	37.0	240	3.4	282

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfeeding, breastfeeding and consuming plain water, non-milk liquids, other milk, and complementary foods (solids and semisolids) are hierarchical and mutually exclusive, and their percentages add to 100%. Thus, children who receive breast milk and non-milk liquids and who do not receive other milk and who do not receive complementary foods are classified in the non-milk liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

¹ Non-milk liquids include juice, juice drinks, clear broth, or other liquids.

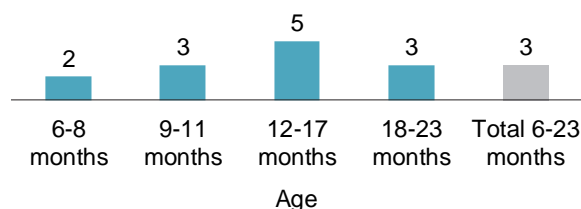
The minimum acceptable diet indicator is used to assess the proportion of children age 6-23 months who meet minimum standards with respect to IYCF practices (WHO 2017). Specifically, children age 6-23 months who have a minimum acceptable diet meet all three IYCF criteria below:

- 1 Breastfeeding, or not breastfeeding and receiving two or more feedings of commercial infant formula; fresh, tinned, or powdered animal milk; or yogurt.
- 2 Fed with foods from five or more of the following eight groups: (a) breast milk; (b) grains, roots, and tubers, including porridge and fortified baby food from grains; (c) legumes and nuts; (d) dairy products (milk, yogurt, cheese); (e) eggs; (f) meat, poultry, fish, and shellfish (and organ meats); (g) vitamin A-rich fruits and vegetables (and red palm oil); and (h) other fruits and vegetables.
- 3 Fed the minimum recommended number of times per day according to age and breastfeeding status
 - a For breastfed children, minimum meal frequency is receiving solid, semisolid, or soft food at least twice a day for infants age 6-8 months and at least three times a day for children age 9-23 months.
 - b For nonbreastfed children age 6-23 months, minimum meal frequency is receiving solid, semisolid, or soft food or milk feeds at least four times a day. At least one of the feeds must be a solid, semisolid, or soft food.

Figure 6 shows the percentage of children being fed the minimum acceptable diet, by age. In total, only 3% of children age 6-23 months meet the criteria for a minimum acceptable diet, and there is little difference by age.

Figure 6 Minimum acceptable diet according to age in months

Percentage of children age 6-23 months



3.14 ANEMIA PREVALENCE IN CHILDREN AND WOMEN

Anemia is a condition that is marked by low levels of hemoglobin in the blood. Iron is a key component of hemoglobin, and iron deficiency is estimated to be responsible for half of all anemia globally. Other causes of anemia include malaria, hookworm, and other helminths; other nutritional deficiencies; chronic infections; and genetic conditions. Anemia is a serious concern for children because it can impair cognitive development and increase morbidity from infectious diseases. In addition to causing weakness, frequent tiredness, and lowered resistance to disease, anemia can be a particularly serious problem for pregnant women, leading to premature delivery and low birth weight.

The 2019-20 LDHS included direct measurement of hemoglobin levels using the HemoCue system. This system consists of a battery-operated photometer and a disposable microcuvette coated with a dried reagent that serves as the blood collection device. The blood in the microcuvette is analyzed using the photometer, which electronically displays the hemoglobin concentration. Hemoglobin testing was carried out among children age 6-59 months and women age 15-49.

For children, a drop of capillary blood taken from their fingertip or heel was drawn into the microcuvette. Parents or guardians were immediately given the results of their child's test. In cases where the child's hemoglobin reading was below 7.0 g/dl, the parent or guardian was referred to a health facility for follow-up. Ninety-three percent of eligible children were tested for anemia (data not shown).

Table 17 presents anemia levels for children age 6-59 months by selected background characteristics. Anemia prevalence, based on hemoglobin levels, was adjusted for altitude using CDC formulas (CDC 1998). All children with a hemoglobin level below 11.0 g/dl were classified as having anemia. Children with a hemoglobin level below 7.0 g/dl were classified as having severe anemia, those with a hemoglobin level of 7.0-9.9 g/dl were classified as having moderate anemia, and those with a hemoglobin level of 10.0-10.9 g/dl were classified as having mild anemia. Overall, 71% of children suffer from some degree of anemia; 29% are mildly anemic, 38% are moderately anemic, and 3% are severely anemic. Anemia is more prevalent among children less than age 36 months than among older children, and the prevalence is highest among children age 9-11 months (79%). Anemia prevalence varies by region, from a low of 69% in North Central to a high of 77% in South Eastern B. By county, the prevalence of anemia among children ranges from 57% in Gbarpolu to 81% in Bomi. There is no clear relationship between anemia prevalence and household wealth.

Table 17 Prevalence of anemia in children

Percentage of children age 6-59 months classified as having anemia, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Anemia status by hemoglobin level				Number of children age 6-59 months
	Any anemia (<11.0 g/dl)	Mild anemia (10.0-10.9 g/dl)	Moderate anemia (7.0-9.9 g/dl)	Severe anemia (<7.0 g/dl)	
Age in months					
6-8	72.1	29.8	38.7	3.7	172
9-11	78.5	41.7	36.1	0.7	150
12-17	76.3	25.4	47.5	3.4	281
18-23	75.8	26.1	45.0	4.7	238
24-35	78.4	30.6	42.2	5.6	512
36-47	69.2	31.5	34.5	3.2	597
48-59	58.4	24.8	31.6	1.9	571
Sex					
Male	70.8	29.3	38.4	3.0	1,237
Female	70.8	28.9	38.0	3.8	1,285
Residence					
Urban	70.1	30.1	36.9	3.0	1,310
Greater Monrovia	67.9	30.0	35.5	2.4	664
Other urban	72.3	30.2	38.5	3.6	646
Rural	71.5	28.1	39.6	3.9	1,212
Region					
North Western	72.2	24.9	43.7	3.6	226
South Central	71.2	28.7	38.9	3.7	1,054
South Eastern A	71.7	30.3	38.4	3.0	172
South Eastern B	76.5	24.8	47.6	4.1	144
North Central	68.8	31.1	34.6	3.1	925
County					
Bomi	80.8	26.1	50.4	4.3	85
Bong	65.7	27.0	34.2	4.5	283
Gbarpolu	56.7	19.0	35.1	2.5	45
Grand Bassa	77.3	22.9	46.1	8.3	175
Grand Cape Mount	72.0	26.6	41.8	3.6	96
Grand Gedeh	72.4	23.6	44.1	4.7	59
Grand Kru	80.0	27.0	49.2	3.8	51
Lofa	61.9	31.6	29.3	1.0	190
Margibi	78.4	30.7	47.4	0.3	126
Maryland	75.6	23.5	46.7	5.4	66
Montserrado	68.6	29.7	35.8	3.1	753
Nimba	73.7	33.5	37.1	3.1	453
River Cess	69.6	34.5	35.1	0.0	45
River Gee	72.3	23.9	46.6	1.9	26
Sinoe	72.5	33.3	35.6	3.6	67
Wealth quintile					
Lowest	70.3	27.6	37.3	5.4	626
Second	71.8	27.1	41.5	3.3	561
Middle	76.6	31.7	41.6	3.2	505
Fourth	69.8	28.7	38.8	2.3	457
Highest	63.3	31.8	29.4	2.1	373
Total	70.8	29.1	38.2	3.4	2,522

Note: Table is based on children who stayed in the household on the night before the interview and who were tested for anemia. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude using formulas in CDC 1998. Hemoglobin is in grams per deciliter (g/dl).

Table 18 presents anemia levels among women age 15-49 by selected background characteristics. Levels of anemia were classified as severe, moderate, and mild based on the hemoglobin concentration in the blood, according to criteria developed by WHO (DeMaeyer et al. 1989), and whether the woman was pregnant or not. All non-pregnant women with a hemoglobin level below 12.0 g/dl were classified as anemic. Non-pregnant women with a hemoglobin level below 8.0 g/dl were classified as having severe anemia, those with a hemoglobin level of 8.0-10.9 g/dl were classified as having moderate anemia, and those with a hemoglobin level of 11.0-11.9 g/dl were classified as having mild anemia. Among pregnant women, those with a hemoglobin level below 11.0 g/dl were classified as anemic. Those with a hemoglobin level below 7.0 g/dl were classified as severely anemic, those with a hemoglobin level of 7.0-9.9 g/dl were classified as moderately anemic, and those with a hemoglobin level of 10.0-10.9 g/dl were classified as mildly anemic. Women who were tested were immediately given the results of their test. Non-pregnant women and pregnant women were referred for follow-up care if their hemoglobin levels were 7 g/dl and 9 g/dl or less, respectively.

Among all eligible women age 15-49, 94% were tested for anemia (data not shown). Anemia prevalence, based on hemoglobin levels, was adjusted for altitude and smoking using CDC formulas (CDC 1998). Overall, 45% of women in Liberia suffer from anemia; 23% are mildly anemic, 21% are moderately anemic, and 1% are severely anemic. The prevalence of anemia is higher among women age 15-19 (55%) than among women in the other age groups (40%-44%). Pregnant women (52%) are more likely to suffer from anemia than their breastfeeding (48%) and nonbreastfeeding/non-pregnant (43%) counterparts. Also, women living in rural areas (47%) are more likely to be anemic than those living in urban areas (43%). By region, the prevalence of anemia ranges from 37% in North Central to 52% in North Western. By county, the prevalence is highest in Grand Bassa (59%) and lowest in Nimba and Lofa (35% each). There are no clear patterns in anemia prevalence according to education or wealth.

Table 18 Prevalence of anemia in women

Percentage of women age 15-49 with anemia, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Anemia status by hemoglobin level				Number of women
	Any (NP <12.0 g/dl / P <11.0 g/dl)	Mild (NP 11.0-11.9 g/dl / P 10.0-10.9 g/dl)	Moderate (NP 8.0-10.9 g/dl / P 7.0-9.9 g/dl)	Severe (NP <8.0 g/dl / P <7.0 g/dl)	
Age					
15-19	55.1	24.8	29.6	0.7	872
20-29	39.8	20.9	18.4	0.5	1,392
30-39	42.4	25.3	16.9	0.2	1,037
40-49	43.7	22.1	19.5	2.1	726
Number of children ever born					
0	51.0	24.3	26.3	0.4	934
1	45.4	23.6	21.5	0.4	770
2-3	37.1	17.2	18.7	1.2	1,073
4-5	44.2	26.6	16.9	0.7	669
6+	46.8	27.3	18.4	1.1	581
Maternity status					
Pregnant	51.7	25.7	25.8	0.1	281
Breastfeeding	47.6	26.1	20.2	1.2	873
Neither	42.9	21.9	20.3	0.7	2,872
Residence					
Urban	43.2	21.7	20.7	0.9	2,515
Greater Monrovia	43.7	20.9	22.1	0.7	1,446
Other urban	42.6	22.8	18.7	1.1	1,069
Rural	46.7	25.4	20.6	0.6	1,512
Region					
North Western	52.4	29.6	22.4	0.4	297
South Central	46.9	21.9	24.1	0.9	2,042
South Eastern A	47.7	26.0	20.8	0.8	236
South Eastern B	48.7	25.1	23.5	0.1	222
North Central	37.3	22.6	13.9	0.7	1,230
County					
Bomi	57.4	31.8	25.6	0.0	120
Bong	41.5	25.2	15.1	1.3	408
Gbarpolu	40.8	27.1	13.7	0.0	57
Grand Bassa	59.1	22.7	33.8	2.6	228
Grand Cape Mount	52.8	28.7	23.2	0.9	120
Grand Gedeh	40.4	20.3	19.3	0.8	83
Grand Kru	51.6	26.1	25.5	0.0	69
Lofa	35.2	22.5	12.5	0.3	300
Margibi	52.9	19.7	31.6	1.5	220
Maryland	45.1	23.8	21.2	0.2	108
Montserrado	44.3	22.0	21.7	0.6	1,593
Nimba	35.2	20.8	13.8	0.5	523
River Cess	50.2	32.9	17.3	0.0	55
River Gee	52.8	26.9	25.9	0.0	44
Sinoe	52.3	26.9	24.1	1.3	98
Education					
No education	43.0	25.7	16.3	1.0	1,211
Elementary	48.8	24.9	23.4	0.5	969
Junior high	48.7	21.4	26.5	0.8	754
Senior high	38.6	19.9	18.3	0.4	858
Higher	42.4	19.4	21.1	2.0	235
Wealth quintile					
Lowest	50.8	28.1	21.9	0.8	708
Second	41.5	22.6	18.3	0.6	714
Middle	43.8	23.4	19.7	0.7	812
Fourth	42.8	19.5	21.9	1.4	899
Highest	44.3	22.9	21.0	0.4	895
Total	44.5	23.1	20.6	0.8	4,027

Note: Prevalence is adjusted for altitude and for smoking status, if known, using formulas in CDC 1998.

3.15 OWNERSHIP AND USE OF MOSQUITO NETS

The use of insecticide-treated mosquito nets is a primary health intervention designed to reduce malaria transmission in Liberia. An insecticide-treated net (ITN) is a factory-treated net that does not require any further treatment. In the 2016 LMIS, 2013 LDHS, and 2011 LMIS, these nets were known as long-lasting insecticidal nets (LLINs).

All households in the 2019-20 LDHS were asked if they owned mosquito nets and, if so, what type and how many. Table 19 presents the percentage of households with at least one ITN, the average number of ITNs per household, and the percentage of households with at least one ITN for every two persons who stayed in the household the previous night, according to background characteristics. Among all households in Liberia, 55% possess at least one ITN. On average, there is one ITN per household. Household ownership of at least one ITN ranges from a high of 71% in Nimba County to a low of 39% in Montserrado County. By residence, household ownership of at least one ITN is higher in rural areas (63%) than in urban areas (49%).

Table 19 Household possession of insecticide-treated nets

Percentage of households with at least one insecticide-treated net (ITN), average number of ITNs per household, and percentage of households with at least one ITN per two persons who stayed in the household last night, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage of households with at least one insecticide-treated net (ITN) ¹	Average number of insecticide-treated nets (ITNs) ¹ per household	Number of households	Percentage of households with at least one insecticide-treated net (ITN) ¹ for every two persons who stayed in the household last night ²	Number of households with at least one person who stayed in the household last night
Residence					
Urban	48.9	0.9	5,190	21.9	5,156
Greater Monrovia	37.9	0.6	2,909	15.7	2,901
Other urban	63.0	1.3	2,281	29.8	2,255
Rural	62.5	1.2	3,870	29.7	3,847
Region					
North Western	65.5	1.2	849	32.7	842
South Central	42.9	0.7	4,330	18.6	4,315
South Eastern A	59.0	1.2	628	32.7	625
South Eastern B	61.0	1.2	472	27.5	468
North Central	67.9	1.4	2,781	31.2	2,752
County					
Bomi	62.2	1.2	319	34.6	316
Bong	63.6	1.3	867	30.0	861
Gbarpolu	66.2	1.2	175	36.5	173
Grand Bassa	61.5	1.2	517	27.8	514
Grand Cape Mount	68.1	1.2	355	29.0	353
Grand Gedeh	65.8	1.2	246	39.0	244
Grand Kru	52.1	1.0	147	22.6	145
Lofa	68.6	1.4	733	33.9	729
Margibi	51.3	0.9	559	25.1	558
Maryland	64.4	1.2	229	27.3	227
Montserrado	38.5	0.6	3,255	16.0	3,244
Nimba	70.6	1.6	1,181	30.5	1,162
River Cess	52.9	0.9	157	26.5	156
River Gee	66.4	1.6	97	35.1	96
Sinoe	55.8	1.2	225	30.3	225
Wealth quintile					
Lowest	57.3	1.0	1,963	26.5	1,951
Second	70.3	1.4	1,721	33.0	1,700
Middle	57.0	1.2	1,746	27.9	1,735
Fourth	48.1	0.9	1,890	22.2	1,883
Highest	41.4	0.8	1,738	16.8	1,734
Total	54.7	1.0	9,060	25.2	9,003

¹ An insecticide-treated net (ITN) is a factory-treated net that does not require any further treatment. In the 2013 LDHS, this was known as a long-lasting insecticidal net (LLIN).

² De facto household members

A quarter of households (25%) in Liberia had at least one ITN for every two persons who stayed in the household the night before the survey. The percentage of households with at least one ITN for every two persons who stayed in the household the night before the survey is higher in rural areas (30%) than in urban areas (22%). The percentage of households with at least one ITN for every two persons who stayed in the household the night before the survey is highest in Grand Gedeh County (39%) and lowest in Montserrado County (16%).

Figure 7 shows the percentage of the de facto population with access to an ITN, which means that all de facto household members could sleep under an ITN if up to two people used each ITN in the household. Overall, 40% of the household population has access to an ITN, a decrease of two percentage points (42%) from the 2016 LMIS. De facto residents in the second-lowest wealth quintile (51%) and those living in the North Central (50%), North Western (48%), and South Eastern A (46%) regions are most likely to have access to an ITN.

Community-level protection against malaria helps reduce the spread of the disease and offers an additional layer of protection against malaria for those who are most vulnerable: children under age 5 and pregnant women. This section describes the use of mosquito nets among these groups.

As shown in Table 20, 44% of children under age 5 slept under an ITN the night before the survey. Children living in households in the second-lowest wealth quintile were more likely to sleep under an ITN (55%) than those living in households in the highest wealth quintile (36%). The proportion of children who slept under an ITN the night before the survey is highest in Grand Gedeh County (57%) and lowest in Montserrado County (33%). Among households with at least one ITN, almost three quarters of children (72%) slept under an ITN the night before the survey.

Table 20 also shows that 47% of pregnant women age 15-49 slept under an ITN the night before the survey. Among households with at least one ITN, a higher percentage of pregnant women in the North Western region than in the South Eastern B region slept under an ITN the night before the survey (87% and 75%, respectively).

In areas of high malaria transmission, by the time an individual reaches adulthood, she or he has acquired immunity that protects against severe disease. However, pregnant women—especially those pregnant for the first time—frequently regain their susceptibility to malaria. Although malaria in pregnant women may not manifest itself as either febrile illness or severe disease, it is frequently the cause of mild to severe anemia. In addition, malaria during pregnancy can interfere with the maternal-fetal exchange that occurs at the placenta, leading to the delivery of low birth weight infants.

In the 2019-20 LDHS, women who had a live birth in the 2 years preceding the survey were asked if they took any SP/Fansidar during the pregnancy leading to their most recent birth and, if so, how many times they took SP/Fansidar. Women were also asked if the SP/Fansidar was received during a prenatal care visit, during another visit to a health facility, or from another source.

Figure 7 Percentage of the de facto population with access to an ITN in the household

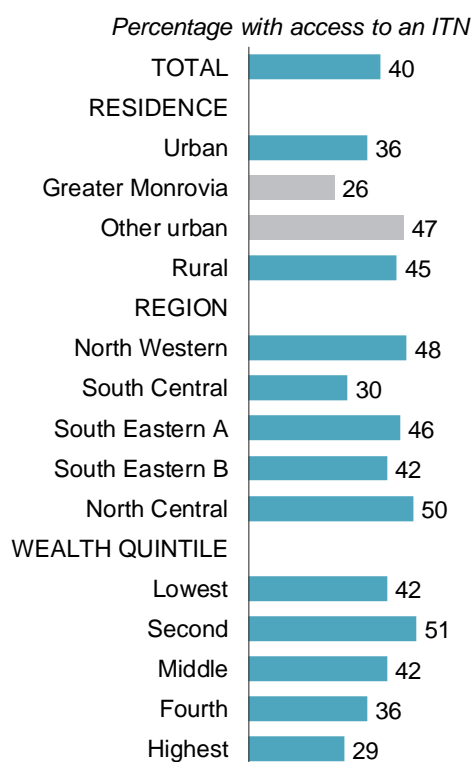


Table 20 Use of insecticide-treated nets by children and pregnant women

Percentage of children under age 5 who, the night before the survey, slept under an insecticide-treated net (ITN); among children under age 5 in households with at least one ITN, percentage who slept under an ITN the night before the survey; percentage of pregnant women age 15-49 who, the night before the survey, slept under an ITN; and among pregnant women age 15-49 in households with at least one ITN, percentage who slept under an ITN the night before the survey, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Children under age 5 in all households		Children under age 5 in households with at least one ITN ¹		Pregnant women age 15-49 in all households		Pregnant women age 15-49 in households with at least one ITN ¹	
	Percentage who slept under an ITN ¹ last night	Number of children	Percentage who slept under an ITN ¹ last night	Number of children	Percentage who slept under an ITN ¹ last night	Number of pregnant women	Percentage who slept under an ITN ¹ last night	Number of pregnant women
Residence								
Urban	42.3	3,141	72.3	1,837	45.3	333	79.1	190
Greater Monrovia	32.5	1,546	67.3	748	34.2	172	*	70
Other urban	51.7	1,595	75.7	1,089	57.1	161	76.2	120
Rural	46.5	2,757	71.1	1,804	48.1	266	77.2	166
Region								
North Western	51.0	509	72.4	359	57.5	54	86.6	36
South Central	35.2	2,457	68.1	1,271	35.4	258	76.8	119
South Eastern A	47.1	367	76.1	227	42.5	39	75.5	22
South Eastern B	43.0	332	68.1	209	42.0	41	75.2	23
North Central	52.4	2,232	74.3	1,575	59.1	207	78.2	157
County								
Bomi	50.6	176	76.0	117	(59.4)	17	*	11
Bong	49.4	630	72.9	427	49.8	72	(71.0)	51
Gbarpolu	53.2	103	72.4	75	(49.3)	12	(82.2)	7
Grand Bassa	39.3	367	60.1	240	(37.4)	33	(54.1)	23
Grand Cape Mount	50.3	231	70.0	166	(60.3)	25	(85.9)	18
Grand Gedeh	57.0	131	80.8	92	(50.1)	12	*	9
Grand Kru	41.7	116	73.8	66	(31.4)	15	*	7
Lofa	53.8	503	77.1	351	(60.2)	43	(84.4)	31
Margibi	44.8	306	79.0	173	(45.3)	34	(82.6)	19
Maryland	38.6	153	59.6	99	(50.4)	18	(76.0)	12
Montserrado	32.8	1,784	68.2	857	33.3	191	(82.0)	77
Nimba	53.5	1,099	73.8	797	(65.9)	92	(80.5)	75
River Cess	41.5	96	79.2	50	(48.3)	13	*	8
River Gee	55.8	63	78.6	45	(43.2)	8	*	4
Sinoe	41.5	141	69.2	85	(28.7)	13	*	5
Wealth quintile								
Lowest	41.2	1,409	66.8	869	44.8	146	73.3	89
Second	55.2	1,315	75.5	963	62.4	122	82.1	93
Middle	46.6	1,147	75.5	708	52.6	123	81.3	79
Fourth	40.2	1,042	69.7	600	35.1	111	(69.4)	56
Highest	35.6	984	70.1	500	(34.7)	98	*	39
Total	44.3	5,898	71.7	3,640	46.5	599	78.2	356

Note: Table is based on children and pregnant women who stayed in the household the night before the interview. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ An insecticide-treated net (ITN) is a factory-treated net that does not require any further treatment. In the 2013 LDHS, this was known as a long-lasting insecticidal net (LLIN).

Table 21 shows that 90% of women with a live birth in the 2 years preceding the survey reported taking at least one dose of SP/Fansidar; 70% reported taking two or more doses, and 40% reported taking three or more doses. While there is little variation according to background characteristics in the percentages of women receiving at least one dose of SP/Fansidar, greater variations are seen for subsequent doses. For instance, the urban to rural gap is only one percentage point (90% versus 91%) among those who received at least one dose. However, this gap increases to two percentage points (69% versus 71%) and then five percentage points (38% versus 43%) as the minimum number of doses increases to two and then three or more. The percentage of women with a live birth in the last 2 years who received SP/Fansidar during pregnancy is highest among those from households in the second-lowest wealth quintile.

Table 21 Use of intermittent preventive treatment (IPTp) by women during pregnancy

Percentage of women age 15-49 with a live birth in the 2 years preceding the survey who, during the pregnancy that resulted in the last live birth, received one or more doses of SP/Fansidar, received two or more doses of SP/Fansidar, and received three or more doses of SP/Fansidar, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage who received one or more doses of SP/Fansidar	Percentage who received two or more doses of SP/Fansidar	Percentage who received three or more doses of SP/Fansidar	Number of women with a live birth in the 2 years preceding the survey
Residence				
Urban	90.1	69.2	37.7	1,129
Greater Monrovia	87.8	64.1	29.9	574
Other urban	92.4	74.5	45.8	555
Rural	90.6	71.2	43.4	967
Region				
North Western	88.3	70.7	45.8	184
South Central	88.2	64.4	34.3	926
South Eastern A	92.4	70.4	40.9	140
South Eastern B	90.7	73.2	38.5	112
North Central	93.0	76.8	46.8	733
County				
Bomi	94.8	81.1	60.2	58
Bong	89.8	69.9	26.5	231
Gbarpolu	80.3	65.0	32.2	37
Grand Bassa	88.9	56.8	38.1	151
Grand Cape Mount	87.4	66.3	42.0	90
Grand Gedeh	90.9	63.5	35.8	53
Grand Kru	85.7	61.6	31.8	43
Lofa	95.1	78.6	45.4	172
Margibi	89.0	70.4	44.2	119
Maryland	93.6	81.6	44.4	48
Montserrado	87.9	65.0	31.6	656
Nimba	94.2	80.7	61.6	330
River Cess	97.4	88.1	46.0	32
River Gee	94.0	77.4	38.9	22
Sinoe	91.0	66.7	42.8	55
Education				
No education	90.6	72.9	44.1	683
Elementary	89.7	69.9	40.7	565
Junior high	91.5	69.1	43.0	381
Senior high	87.4	66.3	34.2	388
Higher	(100.0)	(72.1)	(22.3)	78
Wealth quintile				
Lowest	88.4	69.8	45.7	507
Second	94.0	77.2	47.5	444
Middle	91.3	69.5	40.8	394
Fourth	88.6	70.6	34.6	411
Highest	89.2	61.8	29.4	340
Total	90.3	70.1	40.3	2,096

Note: Figures in parentheses are based on 25-49 unweighted cases.

3.16 PREVALENCE, DIAGNOSIS, AND PROMPT TREATMENT OF FEVER AMONG CHILDREN

In moderately to highly endemic areas of malaria, acute clinical disease is usually confined to young children who suffer high parasite densities. If untreated, this condition can progress very rapidly to severe malaria, which can lead to death. Diagnosis of malaria is based on clinical criteria and supplemented by detection of parasites in the blood (parasitological or confirmatory diagnosis). Fever is a major manifestation of malaria in young children, although it also accompanies other illnesses. In Liberia, artemisinin-based combination therapy (ACT) is the recommended first-line treatment for uncomplicated malaria.

In the 2019-20 LDHS, for each child under age 5, mothers were asked if the child had experienced an episode of fever in the 2 weeks preceding the survey and, if so, whether treatment or advice was sought. Information was also collected about the type and timing of the treatment given.

Table 22 shows the percentage of children under age 5 who had a fever in the 2 weeks preceding the survey. Also shown, among those children with a fever, are the percentage for whom advice or treatment

was sought, the percentage of such children who had a drop of blood taken from a finger or heel prick (presumably for a malaria test), and, among children with fever who took any antimalarial drug, the percentage who took any ACT.

A quarter of children (25%) under age 5 had a fever during the 2 weeks preceding the survey. The percentage of children with a fever was slightly among those in rural areas than among those in urban areas (27% and 24%, respectively). Advice or treatment was sought for 81% of children with a fever, and almost half (49%) had blood taken from a finger or heel for testing. By wealth quintile, advice or treatment for fever ranged from 71% in the lowest quintile to 95% in the highest quintile. Less than half of all children with a fever who took any antimalarial drug took ACT (41%).

Table 22 Prevalence, diagnosis, and prompt treatment of children with fever

Percentage of children under age 5 with a fever in the 2 weeks preceding the survey; among children under age 5 with a fever, percentage for whom advice or treatment was sought and percentage who had blood taken from a finger or heel; and among children under age 5 with a fever who took any antimalarial drug, percentage who took any artemisinin-based combination therapy (ACT), according to background characteristics, Liberia DHS 2019-20

Background characteristic	Children under age 5		Children under age 5 with fever			Children under age 5 with fever who took any antimalarial drug	
	Percentage with a fever in the 2 weeks preceding the survey	Number of children	Percentage for whom advice or treatment was sought ¹	Percentage who had blood taken from a finger or heel for testing	Number of children	Percentage who took any ACT	Number of children
Residence							
Urban	23.7	2,615	87.1	46.8	619	44.2	291
Greater Monrovia	23.8	1,326	90.3	40.4	316	(52.6)	122
Other urban	23.6	1,289	83.8	53.4	304	38.1	168
Rural	26.5	2,251	74.4	51.3	597	38.6	343
Region							
North Western	35.4	419	80.4	58.6	148	44.8	88
South Central	26.5	2,123	84.4	42.5	562	49.2	250
South Eastern A	33.7	303	85.5	59.6	102	44.1	66
South Eastern B	33.4	267	77.7	54.0	89	30.8	50
North Central	18.0	1,754	74.3	51.4	315	30.0	181
County							
Bomi	42.7	143	91.6	72.8	61	47.2	44
Bong	25.5	540	73.9	42.4	138	33.2	81
Gbarpolu	35.4	86	64.8	39.9	30	30.7	17
Grand Bassa	29.5	341	74.5	39.9	101	62.3	50
Grand Cape Mount	29.8	190	76.6	53.3	57	(50.0)	27
Grand Gedeh	30.0	111	85.8	65.3	33	(65.9)	22
Grand Kru	21.4	96	74.4	41.9	21	(17.3)	9
Lofa	11.4	375	(77.9)	(62.3)	43	*	22
Margibi	34.1	256	89.2	55.7	87	29.4	52
Maryland	40.6	123	77.2	57.7	50	38.1	28
Montserrado	24.6	1,526	85.9	40.1	375	51.8	149
Nimba	16.1	840	73.6	57.2	135	(26.1)	78
River Cess	36.3	74	90.0	75.9	27	24.6	20
River Gee	39.4	48	82.5	57.5	19	24.4	13
Sinoe	35.4	117	82.4	44.3	42	40.2	23
Wealth quintile							
Lowest	23.2	1,169	70.5	45.8	271	33.0	151
Second	25.4	1,061	76.5	53.5	270	36.2	167
Middle	22.8	912	75.4	51.9	208	36.7	115
Fourth	27.6	913	89.1	41.4	252	45.8	111
Highest	26.7	811	95.1	53.5	216	64.0	90
Total	25.0	4,866	80.9	49.0	1,217	41.2	634

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Includes advice or treatment from the following sources: public medical sector, private medical sector, shop, and black bagger/drug peddler. Excludes advice or treatment from a traditional practitioner.

3.17 HIV/AIDS AWARENESS, KNOWLEDGE, AND BEHAVIOR

Knowledge of ways to reduce HIV transmission is important in the fight against HIV/AIDS. HIV prevention programs focus their messages and efforts on several important aspects of behavior to avoid the spread of HIV. These include using condoms and limiting sexual intercourse to one uninfected partner. To ascertain depth of knowledge about modes of HIV prevention, 2019-20 LDHS respondents were asked questions about these specific behaviors.

Data on knowledge of HIV prevention methods among women and men age 15-49 are presented in Table 23. Knowledge is generally high in Liberia. Seventy-three percent of women and 83% of men know that HIV can be prevented by using condoms during sexual intercourse, and 79% of women and 85% of men say that limiting sexual intercourse to one uninfected partner can reduce the chances of getting HIV. Overall, 66% of women and 77% of men know that both practices offer protection from HIV.

Women and men age 15-19 have lower levels of knowledge of these HIV prevention methods than people age 20 and older. Urban and rural women have similar levels of knowledge about each of the prevention methods; however, urban men are more knowledgeable than their rural counterparts. As expected, there is generally a positive relationship between increasing levels of education and knowledge of HIV prevention methods among both men and women.

Although knowledge of HIV prevention is generally high, some misconceptions about HIV transmission are still common in Liberia. For instance, 20% of women and 28% of men 15-49 incorrectly believe that HIV can be transmitted by mosquito bites. In addition, 19% of women and 17% of men incorrectly believe that people can become infected by sharing food with a person who has HIV (data not shown). These are the two most common misconceptions about HIV in the country.

Table 23 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting HIV by using condoms every time they have sexual intercourse and by having one sex partner who is not infected and has no other partners, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Women				Men			
	Percentage who say HIV can be prevented by:				Percentage who say HIV can be prevented by:			
	Using condoms ¹	Limiting sexual intercourse to one uninfected partner ²	Using condoms and limiting sexual intercourse to one uninfected partner ²	Number of women	Using condoms ¹	Limiting sexual intercourse to one uninfected partner ²	Using condoms and limiting sexual intercourse to one uninfected partner ²	Number of men
Age								
15-24	69.9	73.6	63.0	3,163	77.0	78.6	69.9	1,533
15-19	64.2	68.0	57.0	1,657	68.0	69.8	58.8	875
20-24	76.2	79.8	69.7	1,506	88.8	90.4	84.8	658
25-29	75.6	81.6	69.6	1,375	86.9	89.9	82.0	558
30-39	76.7	83.5	70.9	2,132	86.7	91.0	82.3	981
40-49	68.8	81.3	64.0	1,395	85.6	88.8	81.1	748
Residence								
Urban	73.3	78.4	67.1	5,023	87.5	90.7	83.5	2,312
Greater Monrovia	71.5	75.7	65.4	2,866	89.7	93.8	87.3	1,368
Other urban	75.6	82.0	69.4	2,156	84.3	86.3	77.9	944
Rural	71.2	79.8	65.2	3,042	75.0	77.4	67.3	1,509
Region								
North Western	65.9	77.4	59.0	621	73.8	69.9	63.1	301
South Central	72.6	76.3	66.0	4,106	86.4	90.6	83.1	1,931
South Eastern A	82.9	91.7	79.4	459	83.9	84.2	76.6	255
South Eastern B	75.5	83.7	69.1	441	82.3	81.8	75.4	226
North Central	71.6	80.4	66.1	2,438	78.1	81.6	70.8	1,108
County								
Bomi	66.8	78.2	57.6	249	81.5	79.2	76.1	118
Bong	73.5	81.1	67.7	795	77.4	76.0	66.8	324
Gbarpolu	66.7	82.1	61.8	112	74.5	82.2	70.0	53
Grand Bassa	79.2	77.5	69.3	467	78.4	78.5	69.3	197
Grand Cape Mount	64.8	74.6	59.2	260	66.6	56.5	48.6	130
Grand Gedeh	81.4	87.6	76.1	172	74.3	71.5	61.6	92
Grand Kru	68.1	74.0	62.0	136	80.4	82.3	74.0	67
Lofa	76.2	82.9	69.1	658	73.2	78.1	65.8	287
Margibi	69.3	73.0	62.6	441	78.3	85.0	74.6	209
Maryland	78.9	88.7	72.7	215	84.3	84.5	78.7	110
Montserrado	72.0	76.6	65.9	3,198	88.6	93.0	86.0	1,524
Nimba	66.9	78.1	62.7	985	81.3	87.2	76.4	496
River Cess	76.2	94.3	74.5	104	86.5	89.7	82.1	52
River Gee	78.8	86.3	71.1	91	80.6	75.4	70.1	50
Sinoe	88.2	94.1	85.3	183	90.6	92.2	86.4	111
Education								
No education	64.7	74.7	58.5	2,474	68.9	74.0	62.1	498
Elementary	69.0	74.6	62.3	1,911	71.6	71.5	61.7	877
Junior high	76.3	82.0	68.8	1,445	82.8	86.9	77.4	738
Senior high	80.8	85.1	76.4	1,761	92.5	94.6	89.1	1,303
Higher	84.8	86.2	79.6	474	90.8	97.6	89.4	404
Wealth quintile								
Lowest	69.1	79.0	63.2	1,379	75.8	78.9	69.4	658
Second	70.2	78.2	63.8	1,431	77.3	78.1	68.9	663
Middle	73.9	81.2	68.9	1,516	78.1	82.8	70.8	743
Fourth	73.2	78.6	65.9	1,829	90.2	93.8	87.6	837
Highest	74.9	77.8	69.1	1,910	88.0	89.8	83.8	920
Total 15-49	72.5	78.9	66.4	8,065	82.6	85.4	77.1	3,821
50-59	na	na	na	na	83.8	86.2	78.3	428
Total 15-59	na	na	na	na	82.7	85.5	77.2	4,249

na = Not applicable

¹ Using condoms every time they have sexual intercourse

² Partner who has no other partners

3.18 COMPREHENSIVE KNOWLEDGE OF HIV PREVENTION AMONG YOUNG PEOPLE

Table 24 presents data on comprehensive knowledge of HIV prevention among young people age 15-24. Comprehensive knowledge of HIV prevention is defined as knowing that both consistent condom use and limiting sexual intercourse to one uninfected faithful partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission: that HIV can be transmitted by mosquito bites or by sharing food with a person who has HIV. Knowledge of how HIV is transmitted is crucial in enabling people to avoid HIV infection, and this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviors.

Table 24 shows that 32% of young women and 30% of young men have comprehensive knowledge of HIV prevention. The proportion of young people with comprehensive knowledge generally increases with age and educational attainment. Young women in urban areas are more likely to demonstrate comprehensive knowledge than their rural counterparts (35% and 25%, respectively). The same is true for young men; those in urban areas (36%) are more likely to have comprehensive knowledge than those in rural areas (16%).

Table 24 Comprehensive knowledge about HIV prevention among young people

Percentage of young women and young men age 15-24 with comprehensive knowledge about HIV prevention, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Women age 15-24		Men age 15-24	
	Percentage with comprehensive knowledge about HIV prevention ¹	Number of women	Percentage with comprehensive knowledge about HIV prevention ¹	Number of men
Age				
15-19	25.9	1,657	21.6	875
15-17	21.0	973	16.9	554
18-19	32.8	684	29.7	321
20-24	37.8	1,506	40.1	658
20-22	37.9	941	39.1	441
23-24	37.6	565	42.1	216
Marital status				
Never married	32.6	2,211	29.1	1,347
Ever had sex	37.1	1,664	35.9	834
Never had sex	18.8	547	17.9	513
Ever married	29.2	952	32.9	187
Residence				
Urban	34.9	2,079	36.4	1,009
Greater Monrovia	36.7	1,132	40.6	566
Other urban	32.8	947	31.0	443
Rural	25.1	1,084	16.3	524
Education				
No education	16.3	395	12.0	105
Elementary	18.4	995	10.8	503
Junior high	36.8	895	36.6	409
Senior high	46.6	767	44.5	467
Higher	57.8	112	*	50
Total 15-24	31.5	3,163	29.5	1,533

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Comprehensive knowledge about HIV prevention means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about transmission or prevention of HIV.

Information on sexual behavior is important in designing and monitoring intervention programs to control the spread of HIV and other sexually transmitted infections. The 2019-20 LDHS included questions on respondents' sexual partners during the 12 months preceding the survey and during their lifetime. Information was also collected on use of condoms at respondents' last sexual intercourse. These questions are sensitive, and it is recognized that some respondents may have been reluctant to provide honest

information on recent sexual behavior. Results are shown in Table 25.1 for women and Table 25.2 for men.

Partners who are neither married to nor living with the respondent are considered to be “higher risk partners.” Among women who had a higher risk sexual partner in the past 12 months, 15% used a condom the last time they had sex with such a partner. Condom use at last higher risk sex among men is 31%.

Mean number of lifetime partners among respondents who have ever had sexual intercourse has increased since 2013, from 4.3 to 5.2 among women and from 13.1 to 14.4 among men.

Table 25.1 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Women

Among all women age 15-49, percentage who had sexual intercourse with more than one sexual partner in the past 12 months and percentage who had intercourse in the past 12 months with a person who neither was their husband nor lived with them; among women having more than one partner in the past 12 months, percentage reporting that a condom was used during last intercourse; among women age 15-49 who had sexual intercourse in the past 12 months with a person who neither was their husband nor lived with them, percentage who used a condom during last sexual intercourse with such a partner; and among women who ever had sexual intercourse, mean number of sexual partners during their lifetime, according to background characteristics, Liberia DHS 2019-20

Background characteristic	All women			Women who had 2+ partners in the past 12 months		Women who had intercourse in the past 12 months with a person who neither was their husband nor lived with them		Women who ever had sexual intercourse ¹	
	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who neither was their husband nor lived with them	Number of women	Percentage who reported using a condom during last sexual intercourse	Number of women	Percentage who reported using a condom during last sexual intercourse with such a partner	Number of women	Mean number of sexual partners in lifetime	Number of women
Age									
15-24	8.3	52.4	3,163	22.2	261	16.7	1,657	3.4	2,578
15-19	5.6	51.2	1,657	25.1	93	14.7	849	2.3	1,136
20-24	11.2	53.7	1,506	20.6	169	18.8	808	4.2	1,441
25-29	9.0	39.8	1,375	16.8	124	16.0	547	5.3	1,317
30-39	5.4	22.4	2,132	8.6	114	11.2	478	6.3	2,030
40-49	3.6	17.4	1,395	7.5	51	9.5	242	6.8	1,289
Marital status									
Never married	9.4	69.9	3,128	23.9	296	15.9	2,188	5.2	2,497
Married/living together	4.3	6.5	4,216	7.7	181	20.9	274	5.0	4,044
Divorced/separated/widowed	10.2	64.1	721	10.7	74	7.6	462	6.1	672
Residence									
Urban	8.1	41.8	5,023	20.1	405	17.2	2,099	5.7	4,420
Greater Monrovia	9.2	46.7	2,866	22.8	264	18.6	1,338	5.9	2,564
Other urban	6.5	35.3	2,156	15.1	141	14.8	761	5.3	1,856
Rural	4.8	27.1	3,042	7.5	145	9.6	825	4.4	2,793
Region									
North Western	6.6	28.1	621	8.2	41	12.9	174	3.6	568
South Central	8.6	42.8	4,106	19.0	351	16.6	1,756	5.1	3,646
South Eastern A	7.3	30.2	459	7.8	33	11.5	138	5.1	419
South Eastern B	6.2	38.0	441	19.9	27	14.0	167	4.0	419
North Central	4.0	28.2	2,438	14.8	97	12.7	687	5.9	2,162
County									
Bomi	8.5	32.4	249	(8.7)	21	14.2	81	3.1	225
Bong	5.9	31.6	795	(20.6)	47	16.4	252	3.3	731
Gbarpolu	4.0	23.6	112	*	5	7.9	26	3.9	106
Grand Bassa	8.7	31.9	467	(1.8)	41	8.7	149	3.8	416
Grand Cape Mount	5.9	25.9	260	(9.8)	15	13.3	67	3.9	237
Grand Gedeh	3.5	26.8	172	*	6	25.7	46	4.8	161
Grand Kru	2.8	35.1	136	*	4	7.7	48	4.1	128
Lofa	1.8	27.8	658	*	12	5.7	183	3.0	589
Margibi	5.7	36.4	441	(0.0)	25	5.6	161	3.0	381
Maryland	9.2	41.3	215	21.8	20	17.2	89	4.1	205
Montserrado	8.9	45.2	3,198	23.1	285	18.7	1,447	5.6	2,849
Nimba	3.9	25.7	985	(12.2)	38	13.9	253	10.3	841
River Cess	11.3	33.1	104	(8.2)	12	4.6	34	4.6	96
River Gee	4.3	34.4	91	*	4	14.3	31	3.6	86
Sinoe	8.5	31.7	183	(3.3)	16	4.3	58	5.8	161
Education									
No education	4.1	19.2	2,474	7.4	102	7.0	476	4.7	2,310
Elementary	4.8	33.3	1,911	13.1	92	11.3	635	5.2	1,585
Junior high	7.6	46.5	1,445	6.9	110	12.0	671	5.0	1,272
Senior high	12.0	52.3	1,761	28.7	211	23.8	921	5.4	1,609
Higher	7.4	46.4	474	*	35	16.4	220	7.2	438
Wealth quintile									
Lowest	4.5	23.8	1,379	2.7	62	7.0	327	4.8	1,286
Second	4.7	28.8	1,431	5.1	68	10.2	412	5.6	1,302
Middle	6.2	35.9	1,516	15.8	94	9.7	544	4.6	1,316
Fourth	9.2	45.4	1,829	19.4	168	18.4	830	5.1	1,642
Highest	8.3	42.4	1,910	25.2	158	21.1	810	5.7	1,667
Total	6.8	36.3	8,065	16.8	550	15.1	2,924	5.2	7,213

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Means are calculated excluding respondents who gave non-numeric responses.

Table 25.2 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Men

Among all men age 15-49, percentage who had sexual intercourse with more than one sexual partner in the past 12 months and percentage who had intercourse in the past 12 months with a person who neither was their wife nor lived with them; among men having more than one partner in the past 12 months, percentage reporting that a condom was used during last intercourse; among men age 15-49 who had sexual intercourse in the past 12 months with a person who neither was their wife nor lived with them, percentage who used a condom during last sexual intercourse with such a partner; and among men who ever had sexual intercourse, mean number of sexual partners during their lifetime, according to background characteristics, Liberia DHS 2019-20

Background characteristic	All men			Men who had 2+ partners in the past 12 months		Men who had intercourse in the past 12 months with a person who neither was their wife nor lived with them		Men who ever had sexual intercourse ¹	
	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who neither was their wife nor lived with them	Number of men	Percentage who reported using a condom during last sexual intercourse	Number of men	Percentage who reported using a condom during last sexual intercourse with such a partner	Number of men	Mean number of sexual partners in lifetime	Number of men
Age									
15-24	20.2	56.9	1,533	31.0	309	34.3	872	7.3	983
15-19	9.4	40.4	875	30.0	82	33.1	354	4.9	387
20-24	34.5	78.7	658	31.4	227	35.1	518	8.9	597
25-29	36.3	69.3	558	23.5	203	29.9	387	13.4	489
30-39	23.5	39.1	981	14.4	231	27.8	384	18.0	839
40-49	22.6	30.8	748	7.0	169	26.5	230	21.3	642
Marital status									
Never married	19.5	64.5	1,684	31.9	329	33.5	1,086	8.6	1,120
Married/living together	26.9	30.8	1,906	11.1	513	28.1	588	17.8	1,629
Divorced/separated/widowed	30.5	86.4	231	38.0	71	26.7	200	18.7	205
Type of union									
In polygynous union	70.6	29.3	83	3.6	59	(18.9)	24	20.1	73
Not in polygynous union	24.9	30.9	1,823	12.1	454	28.5	563	17.7	1,556
Not currently in union	20.9	67.1	1,915	33.0	400	32.5	1,285	10.2	1,325
Residence									
Urban	23.6	52.4	2,312	27.3	545	37.1	1,211	13.3	1,786
Greater Monrovia	21.5	48.6	1,368	27.0	295	39.4	664	11.9	1,053
Other urban	26.5	57.9	944	27.6	250	34.4	547	15.3	733
Rural	24.3	43.8	1,509	10.9	367	20.0	662	16.1	1,168
Region									
North Western	15.5	34.8	301	13.3	47	15.9	105	9.3	241
South Central	22.5	48.8	1,931	23.1	434	36.0	943	12.9	1,475
South Eastern A	35.3	56.1	255	16.8	90	26.2	143	22.4	199
South Eastern B	24.5	51.3	226	14.2	56	22.5	116	8.4	177
North Central	25.8	51.1	1,108	20.6	286	28.8	566	17.8	861
County									
Bomi	17.7	30.5	118	(15.4)	21	(25.3)	36	10.1	94
Bong	21.1	45.1	324	31.4	68	28.5	146	8.0	238
Gbarpolu	16.1	44.2	53	*	9	14.9	24	12.6	50
Grand Bassa	38.5	57.9	197	13.1	76	25.3	114	26.5	165
Grand Cape Mount	13.3	34.8	130	*	17	9.0	45	6.9	97
Grand Gedeh	42.1	60.6	92	21.4	39	36.7	56	18.3	83
Grand Kru	34.6	50.7	67	14.9	23	23.3	34	10.2	53
Lofa	17.4	38.2	287	(6.5)	50	22.8	110	14.2	231
Margibi	24.0	47.8	209	20.1	50	31.1	100	12.0	136
Maryland	13.9	50.0	110	(9.8)	15	21.9	55	7.4	91
Montserrado	20.2	47.8	1,524	26.1	308	38.3	729	11.0	1,174
Nimba	33.9	62.6	496	20.4	168	31.0	310	26.0	392
River Cess	21.6	48.1	52	(5.0)	11	12.2	25	8.4	39
River Gee	34.6	55.2	50	17.2	17	22.8	27	8.1	33
Sinoe	36.0	56.1	111	15.8	40	22.5	62	34.0	77
Education									
No education	17.9	32.5	498	15.4	89	28.7	162	15.2	405
Elementary	19.5	40.1	877	13.4	171	18.0	352	14.3	550
Junior high	25.4	54.5	738	19.5	188	26.6	402	11.7	549
Senior high	27.3	56.3	1,303	25.2	356	37.8	733	15.2	1,103
Higher	26.8	55.4	404	23.7	108	39.5	224	15.4	347
Wealth quintile									
Lowest	23.6	44.3	658	9.3	155	18.3	292	16.2	535
Second	26.6	48.2	663	14.1	176	25.2	319	19.0	515
Middle	26.7	53.7	743	24.7	199	28.8	399	12.4	555
Fourth	26.3	50.7	837	27.3	220	35.7	425	11.7	653
Highest	17.6	47.6	920	24.8	162	41.6	438	13.8	697
Total 15-49	23.9	49.0	3,821	20.7	912	31.1	1,873	14.4	2,954
50-59	24.4	27.1	428	16.8	104	21.4	116	25.9	329
Total 15-59	23.9	46.8	4,249	20.3	1,017	30.5	1,989	15.6	3,283

Notes: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Means are calculated excluding respondents who gave non-numeric responses.

3.19 COVERAGE OF HIV TESTING SERVICES

Knowledge of HIV status helps HIV-negative individuals make specific decisions to reduce risk and increase safer sex practices so that they can remain disease free. Among those who are living with HIV, knowledge of status is a precondition for being able to begin HIV care and treatment.

To assess awareness and coverage of HIV testing services, LDHS respondents were asked if they had ever been tested for HIV. If they said that they had, they were asked if they had received the results of their last test and where they had been tested. If they had never been tested, they were asked if they knew a place where they could go to be tested.

Tables 26.1 and 26.2 show that a majority of respondents age 15-49 (72% of women and 65% of men) knew of a place where they could get an HIV test. Respondents age 15-19 (48% of women and 43% of men) were less likely than those age 20-49 to know a place where they could go to be tested. Never-married respondents who had never had sex were much less likely to know a place to get an HIV test (28% of women and 36% of men). Among both women and men, knowledge of where to get an HIV test generally rises with increasing education and wealth.

Tables 26.1 and 26.2 also show coverage of HIV testing services. Among respondents age 15-49, a larger proportion of men (66%) than women (45%) had never been tested. Overall, 50% of women and 32% of men had ever been tested and had received the results of their last test. The likelihood of having ever had an HIV test and receiving the results of the last test was lowest in the 15-19 age group (23% of women and 11% of men) and among respondents who had never been married and had never had sex (4% of women and 9% of men). The percentage of men and women who were ever tested and received the results of their last test generally rises with increasing education. Twenty-two percent of women and 21% of men age 15-49 had been tested in the 12-month period preceding the survey and received the results of the last test they took.

Table 26.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women by testing status and by whether they received the results of the last test, percentage of women ever tested, and percentage of women who were tested in the past 12 months and received the results of the last test, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of women
		Ever tested and received results	Ever tested, did not receive results	Never tested ¹				
Age								
15-24	61.3	35.8	4.1	60.1	100.0	39.9	19.4	3,163
15-19	48.1	23.2	2.0	74.8	100.0	25.2	14.5	1,657
20-24	75.7	49.7	6.4	43.9	100.0	56.1	24.8	1,506
25-29	80.9	65.0	4.6	30.4	100.0	69.6	30.8	1,375
30-39	82.4	63.6	4.5	31.9	100.0	68.1	23.8	2,132
40-49	73.9	48.1	4.3	47.6	100.0	52.4	16.7	1,395
Marital status								
Never married	63.4	39.2	2.9	57.9	100.0	42.1	19.4	3,128
Ever had sex	71.0	46.7	3.5	49.8	100.0	50.2	22.9	2,578
Never had sex	27.9	4.0	0.0	96.0	100.0	4.0	3.1	551
Married/living together	77.7	57.2	5.0	37.8	100.0	62.2	23.6	4,216
Divorced/separated/ widowed	80.0	57.9	6.7	35.4	100.0	64.6	24.1	721
Residence								
Urban	73.0	52.8	4.2	43.1	100.0	56.9	23.2	5,023
Greater Monrovia	70.5	53.0	3.9	43.1	100.0	56.9	21.5	2,866
Other urban	76.4	52.5	4.5	43.0	100.0	57.0	25.4	2,156
Rural	71.3	46.2	4.6	49.2	100.0	50.8	20.2	3,042
Region								
North Western	73.8	50.7	3.2	46.2	100.0	53.8	24.3	621
South Central	70.7	51.3	4.1	44.6	100.0	55.4	21.2	4,106
South Eastern A	82.5	56.1	2.4	41.5	100.0	58.5	20.4	459
South Eastern B	81.2	50.8	2.4	46.7	100.0	53.3	21.1	441
North Central	71.4	47.3	5.7	47.0	100.0	53.0	23.3	2,438
County								
Bomi	78.0	50.8	3.9	45.3	100.0	54.7	30.1	249
Bong	76.3	49.5	6.6	43.9	100.0	56.1	24.5	795
Gbarpolu	67.6	41.8	5.9	52.3	100.0	47.7	16.6	112
Grand Bassa	67.5	47.6	2.8	49.6	100.0	50.4	20.0	467
Grand Cape Mount	72.5	54.3	1.3	44.4	100.0	55.6	22.2	260
Grand Gedeh	82.2	63.1	2.5	34.3	100.0	65.7	26.6	172
Grand Kru	68.4	35.9	3.2	60.9	100.0	39.1	18.8	136
Lofa	69.5	42.3	5.1	52.5	100.0	47.5	18.9	658
Margibi	69.1	45.8	3.4	50.8	100.0	49.2	23.1	441
Maryland	87.6	58.2	0.6	41.2	100.0	58.8	22.4	215
Montserrado	71.3	52.5	4.4	43.1	100.0	56.9	21.1	3,198
Nimba	68.6	48.9	5.4	45.8	100.0	54.2	25.1	985
River Cess	88.4	59.1	2.7	38.2	100.0	61.8	20.2	104
River Gee	85.3	55.8	5.6	38.5	100.0	61.5	21.5	91
Sinoe	79.5	47.6	2.2	50.2	100.0	49.8	14.6	183
Education								
No education	67.5	45.9	5.0	49.1	100.0	50.9	18.7	2,474
Elementary	67.7	44.7	4.0	51.3	100.0	48.7	20.5	1,911
Junior high	68.8	46.8	4.0	49.1	100.0	50.9	21.1	1,445
Senior high	81.9	58.7	4.3	36.9	100.0	63.1	24.8	1,761
Higher	92.5	74.7	3.2	22.1	100.0	77.9	38.2	474
Wealth quintile								
Lowest	68.7	43.4	4.5	52.1	100.0	47.9	20.0	1,379
Second	70.8	46.0	5.2	48.8	100.0	51.2	21.0	1,431
Middle	72.3	49.6	4.5	45.9	100.0	54.1	23.3	1,516
Fourth	74.4	55.1	4.1	40.9	100.0	59.1	21.3	1,829
Highest	74.3	54.4	3.6	41.9	100.0	58.1	24.0	1,910
Total	72.4	50.3	4.3	45.4	100.0	54.6	22.0	8,065

¹ Includes "don't know/missing"

Table 26.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men by testing status and by whether they received the results of the last test, percentage of men ever tested, and percentage of men who were tested in the past 12 months and received the results of the last test, according to background characteristics, Liberia DHS 2019-20

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of men by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of men
		Ever tested and received results	Ever tested, did not receive results	Never tested ¹				
Age								
15-24	52.2	14.3	1.5	84.2	100.0	15.8	10.8	1,533
15-19	42.6	10.5	1.0	88.5	100.0	11.5	8.2	875
20-24	65.1	19.4	2.2	78.4	100.0	21.6	14.2	658
25-29	71.7	40.3	1.7	58.0	100.0	42.0	28.4	558
30-39	76.1	45.6	1.2	53.2	100.0	46.8	27.9	981
40-49	73.5	44.7	2.1	53.2	100.0	46.8	28.2	748
Marital status								
Never married	55.5	18.5	1.4	80.1	100.0	19.9	13.5	1,684
Ever had sex	64.4	22.9	1.6	75.5	100.0	24.5	16.0	1,163
Never had sex	35.6	8.8	0.9	90.3	100.0	9.7	8.0	520
Married/living together	74.0	43.6	1.9	54.5	100.0	45.5	27.4	1,906
Divorced/separated/widowed	65.7	35.7	1.1	63.2	100.0	36.8	25.1	231
Residence								
Urban	67.9	33.5	1.3	65.2	100.0	34.8	22.6	2,312
Greater Monrovia	63.7	34.8	1.0	64.1	100.0	35.9	23.4	1,368
Other urban	74.1	31.6	1.6	66.8	100.0	33.2	21.6	944
Rural	61.4	29.9	2.1	68.0	100.0	32.0	18.9	1,509
Region								
North Western	53.8	26.4	2.0	71.7	100.0	28.3	17.3	301
South Central	66.0	34.7	1.3	64.0	100.0	36.0	22.9	1,931
South Eastern A	73.0	34.3	4.8	60.9	100.0	39.1	17.0	255
South Eastern B	60.1	17.0	0.9	82.1	100.0	17.9	8.6	226
North Central	66.7	31.6	1.5	66.9	100.0	33.1	22.7	1,108
County								
Bomi	55.8	30.0	2.5	67.5	100.0	32.5	18.2	118
Bong	60.2	26.7	1.5	71.7	100.0	28.3	20.6	324
Gbarpolu	55.6	38.3	2.0	59.7	100.0	40.3	28.1	53
Grand Bassa	64.6	31.5	2.0	66.4	100.0	33.6	19.4	197
Grand Cape Mount	51.2	18.1	1.5	80.4	100.0	19.6	12.0	130
Grand Gedeh	66.3	37.7	4.0	58.3	100.0	41.7	25.3	92
Grand Kru	44.5	18.8	1.9	79.2	100.0	20.8	5.6	67
Lofa	57.6	34.1	0.8	65.1	100.0	34.9	25.4	287
Margibi	78.4	36.2	2.1	61.6	100.0	38.4	28.5	209
Maryland	66.2	11.8	0.0	88.2	100.0	11.8	6.5	110
Montserrado	64.4	34.9	1.0	64.0	100.0	36.0	22.6	1,524
Nimba	76.3	33.3	1.8	64.9	100.0	35.1	22.4	496
River Cess	82.7	35.2	0.9	64.0	100.0	36.0	11.8	52
River Gee	67.7	26.1	1.7	72.2	100.0	27.8	17.3	50
Sinoe	74.1	31.1	7.3	61.6	100.0	38.4	12.6	111
Education								
No education	51.9	23.2	1.6	75.3	100.0	24.7	14.7	498
Elementary	46.8	18.7	1.7	79.6	100.0	20.4	13.3	877
Junior high	61.8	21.2	1.5	77.3	100.0	22.7	13.7	738
Senior high	76.6	42.0	1.6	56.5	100.0	43.5	27.5	1,303
Higher	92.4	59.9	1.7	38.4	100.0	61.6	39.4	404
Wealth quintile								
Lowest	58.9	24.8	1.8	73.4	100.0	26.6	15.9	658
Second	61.1	30.5	2.5	67.0	100.0	33.0	18.9	663
Middle	65.9	27.8	1.6	70.6	100.0	29.4	18.6	743
Fourth	67.7	34.9	1.3	63.8	100.0	36.2	23.5	837
Highest	70.5	39.3	1.0	59.7	100.0	40.3	26.5	920
Total 15-49	65.3	32.1	1.6	66.3	100.0	33.7	21.2	3,821
50-59	73.1	39.8	3.1	57.1	100.0	42.9	21.5	428
Total 15-59	66.1	32.9	1.7	65.4	100.0	34.6	21.2	4,249

¹ Includes "don't know/missing"

3.20 FEMALE GENITAL MUTILATION

Female genital mutilation (FGM), also known as female genital cutting or female circumcision, is defined by the World Health Organization (WHO) as any procedure that involves partial or total removal of the external genitalia and/or injury to the female genital organs, whether for cultural or any other non-therapeutic reasons (WHO, UNICEF, and UNFPA 1997).

The 2019-20 LDHS collected information on FGM from all women age 15-49. The topics covered included knowledge and prevalence of FGM, age at circumcision, and attitudes towards the practice of circumcision.

It is important to note that in the 2013 LDHS, women interviewed were not asked directly about FGM and instead were asked questions regarding knowledge and prevalence of membership in the Sande bush society. In the 2013 LDHS, women age 15-49 who reported being members of the Sande bush society were considered a proxy for having undergone FGM.

Table 27 shows that 83% of women in Liberia have heard of FGM. Knowledge of FGM generally increases with age, ranging from 73% among women age 15-19 to 91% among women age 45-49. By region, the percentage of women who have heard of FGM is lowest in South Eastern B (79%) and highest in North Western (87%). By county, 72% of women residing in Maryland and 73% living in Grand Cape Mount have heard of FGM, as compared with almost all women in River Cess (99%), Bomi (98%), Gbarpolu (97%), and Margibi (96%). Muslim women (77%) are less likely than Christian women (84%) and women without a religion (83%) to have heard of female circumcision. There is no clear relationship between knowledge of FGM and household wealth.

Among women age 15-49 who have heard of FGM, 38% report having undergone the procedure. The prevalence of FGM generally increases with age, from 28% among women age 15-19 to 60% among women age 45-49. The gap in FGM prevalence between women in urban and rural areas is large; 30% of urban women are circumcised, as compared with 52% of rural women. Regional and county variations are even more dramatic. Only 3% of women in the South Eastern B region are circumcised, compared with 68% of women in the North Western region. In North Western, the prevalence of FGM is highest in Gbarpolu County (78%). Christian women (35%) are less likely to be circumcised than Muslim women (59%) and women who do not have a religion (54%). The prevalence of FGM decreases markedly with increasing wealth. Women in the lowest wealth quintile are almost three times more likely to have been circumcised than women in the highest wealth quintile (57% versus 20%).

Table 27 Prevalence of female genital mutilation

Percentage of women age 15-49 who have heard of female circumcision and percentage of women circumcised, according to background characteristics, Liberia DHS 2019-20

Background characteristic	All women		Among women who have heard of female circumcision:	
	Percentage who have heard of female circumcision	Number of women	Percentage of women circumcised	Number of women
Age				
15-19	72.8	1,657	27.6	1,207
20-24	82.0	1,506	25.9	1,235
25-29	83.9	1,375	31.5	1,154
30-34	89.4	1,112	40.9	995
35-39	85.8	1,020	51.0	875
40-44	88.9	769	52.4	684
45-49	90.6	626	59.7	567
Residence				
Urban	83.9	5,023	29.9	4,214
Greater Monrovia	85.1	2,866	23.1	2,439
Other urban	82.3	2,156	39.2	1,774
Rural	82.2	3,042	52.3	2,502
Region				
North Western	87.2	621	68.3	542
South Central	83.6	4,106	29.8	3,431
South Eastern A	85.1	459	19.6	391
South Eastern B	79.1	441	2.9	349
North Central	82.2	2,438	54.2	2,004
County				
Bomi	98.2	249	62.5	245
Bong	76.2	795	60.0	606
Gbarpolu	96.9	112	77.5	108
Grand Bassa	86.7	467	40.3	405
Grand Cape Mount	72.6	260	70.6	189
Grand Gedeh	77.9	172	12.2	134
Grand Kru	84.5	136	3.3	115
Lofa	80.4	658	68.2	529
Margibi	96.3	441	48.4	425
Maryland	72.3	215	3.1	155
Montserrado	81.3	3,198	25.2	2,601
Nimba	88.2	985	41.7	869
River Cess	99.1	104	51.6	103
River Gee	87.1	91	2.0	79
Sinoe	84.0	183	4.6	154
Religion				
Christian	84.3	6,776	34.7	5,712
Muslim	77.1	1,153	58.6	889
Traditional religion	(90.6)	31	(64.1)	28
No religion	83.0	100	53.8	83
Other	*	4	*	4
Wealth quintile				
Lowest	84.7	1,379	57.1	1,167
Second	84.5	1,431	49.4	1,209
Middle	81.7	1,516	46.3	1,239
Fourth	81.2	1,829	27.1	1,485
Highest	84.6	1,910	20.3	1,616
Total	83.3	8,065	38.2	6,716

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

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