Ethiopia Demographic and Health Survey 2011

Preliminary Report

Central Statistical Agency
Addis Ababa, Ethiopia

MEASURE DHS, ICF Macro
Calverton, Maryland, USA

The Ethiopia Demographic and Health Survey (EDHS) was implemented by the Ethiopian Central Statistics Agency (CSA) from 27 December 2010 to June 2011. The funding for the EDHS was provided by the United States Agency for International Development (USAID), HIV/AIDS Prevention and Control Office (HAPCO), UNFPA, UNICEF, the Centres for Disease Control and Prevention (CDC), and the Government of Ethiopia. ICF Macro provided technical assistance as well as funding to the project through the MEASURE DHS project, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

Additional information about the 2011 EDHS may be obtained from the Central Statistical Agency, P.O. Box 1143, Addis Ababa, Ethiopia; Telephone: (251) 111 55 30 11/111 15 78 41, Fax: (251) 111 55 03 34, E-mail: csa@ethionet.et.

Information about the MEASURE DHS project may be obtained from ICF Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, USA; Telephone: 301-572-0200, Fax: 301-572-0999, E-mail: info@measuredhs.com, Internet: http://www.measuredhs.com.

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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infections
BCG	Bacille Calmette-Guerin (vaccine)
CDC	Centers for Disease Control and Prevention
CHTTS	CSPro HIV Test Tracking System
CPR	Contraceptive Prevalence Rate
CSA	Central Statistical Agency
DFID	Department for International Development
DPT	Diphtheria Pertussis Tetanus (vaccine)
EDHS	Ethiopia Demographic and Health Survey
EHNRI	Ethiopia Health and Nutrition Research Institute
HepB	Hepatitis B (vaccine)
HEW	Health Extension Worker
Hib	Haemophilus influenza type B (vaccine)
HIV	Human Immunodeficiency Virus
IUD	Intrauterine device
IYCF	Infant and Young Child Feeding
LAM	Lactational Amenorrhoea Method
MDG	Millennium Development Goal
MOH	Ministry of Health
NRERC	National Research Ethics Review Committee
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PAHO	Pan American Health Organization
PHC	Population and Housing Census
SNNPR	Southern Nations, Nationalities, and People’s Region
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Programmes on HIV and AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

I. INTRODUCTION

The 2011 Ethiopia Demographic and Health Survey (2011 EDHS) was conducted under the aegis of the Ministry of Health and was implemented by the Central Statistical Agency from September 2010 through June 2011 with a nationally representative sample of nearly 18,500 households. The Ethiopian Health and Nutrition Research Institute (EHNRI) is responsible for the testing of HIV samples. All women age 15-49 and all men age 15-59 in these households were eligible for individual interview.

Other agencies and organizations facilitating the successful implementation of the survey through technical and donor support include the Federal Ministry of Health (FMOH), the Ethiopia Health and Nutrition Research Institute (EHNRI), USAID/Ethiopia, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the Department for International Development (DFID), the Centers for Disease Control and Prevention (CDC), and the HIV/AIDS Prevention and Control Office (HAPCO). ICF Macro provided technical assistance and funding to the 2011 EDHS through the MEASURE DHS project, a USAID-funded program supporting the implementation of population and health surveys in countries worldwide.

The 2011 EDHS is a follow-up to the 2000 and 2005 EDHS surveys and provides updated estimates of basic demographic and health indicators.

This preliminary report presents a first look at selected results of the 2011 EDHS. A comprehensive analysis of the data will appear in a final report to be published in 2012. Although the results presented here are considered provisional, they are not expected to differ significantly from those presented in the final report.

II. SURVEY IMPLEMENTATION

A. Sample Design

The sample for the 2011 EDHS was designed to provide population and health indicators at the national and regional levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of Ethiopia's eleven geographic/administrative regions: nine regional states (Tigray, Affar, Amhara, Oromia, Somali, Benishangul-Gumuz, SNNP, Gambela and Harari) and two city administrations (Addis Ababa and Dire Dawa). The sampling frame used for the 2011 EDHS was the Population and Housing Census conducted by the Central Statistical Agency (CSA) in 2007 (2007 PHC).

Administratively, each of the 11 geographic regions in Ethiopia is divided into zones and each zone into lower administrative units called *woredas*. Each *woreda* was then further subdivided into the lowest administrative unit, called a *kebele*. During the 2007 PHC, each of the *kebeles* was subdivided into convenient areas called census enumeration areas (EAs). The 2011 EDHS sample was selected using a stratified, two-stage cluster design, and EAs were the sampling units for the first stage. The 2011 EDHS sample included 624 EAs, 187 in urban areas and 437 in rural areas.

Households comprised the second stage of sampling. A complete listing of households[1] was carried out in each of the 624 selected EAs from September 2010 through January 2011. Maps were drawn for each of the clusters and all private households were listed. The listing excluded institutional living arrangements (e.g., army barracks, hospitals, police camps, and boarding schools). A representative sample of 17,817 households was selected for the 2011 EDHS survey. Because the sample is not self-weighting at the national level, all data in this report have been weighted unless otherwise specified.

All women age 15-49 and all men age 15-59 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. Anaemia testing was performed in each household, among eligible women and men who consented to being tested. With the parent's or guardian's consent, children age 6 to 59 months and under were also tested for anaemia in each household. Blood samples were collected for laboratory testing of HIV in each household, among eligible women and men who consented.

B. Questionnaires

Three questionnaires were used for the 2011 EDHS: the Household Questionnaire, the Woman's Questionnaire, and the Man's Questionnaire. These questionnaires were adapted from model survey instruments developed for the MEASURE DHS project and the UNICEF Multiple Indicator Cluster Survey (MICS) to reflect the population and health issues relevant to Ethiopia. Issues were identified at a series of meetings with various stakeholders from government ministries and agencies, non-governmental organizations (NGOs), and international donors. In addition to English, the questionnaires were translated into three major languages, Amharigna, Oromigna, and Tigrigna.

The Household Questionnaire was used to list all the usual members and visitors of selected households. Some basic information was collected on the characteristics of each person listed, including his or her age, sex, education, and relationship to the head of the household. For children under age 18, survival status of the parents was determined. The data on the age and sex of household

members obtained in the Household Questionnaire was used to identify women and men who were eligible for the individual interview. Additionally, the Household Questionnaire collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership and use of mosquito nets (to assess the coverage of malaria prevention programmes).

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

- Background characteristics (age, education, media exposure, etc.)
- Birth history and childhood mortality
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal, delivery, and postnatal care
- Breastfeeding and infant feeding practices
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Women's work and husband's background characteristics
- Awareness and behaviour regarding AIDS and other sexually transmitted infections (STIs)
- Adult mortality, including maternal mortality
- Knowledge of tuberculosis

The Man's Questionnaire was administered to all men age 15-59 in each household in the 2011 EDHS sample. The Man's Questionnaire collected much of the same information found in the Woman's Questionnaire but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health.

C. Anthropometry, Anaemia, and HIV Testing

The 2011 EDHS incorporated three 'biomarkers': anthropometry, anaemia testing, and HIV testing. The protocol for anaemia testing and for the blood specimen collection for HIV testing was reviewed and approved by the Ethiopia Health and Nutrition Research Institute Review Board, National Research Ethics Review Committee (NRERC) at the Federal Democratic Republic of Ethiopia Ministry of Science and Technology, the Institutional Review Board of ICF Macro, and the Centers for Disease Control and Prevention (CDC) in Atlanta.

Anthropometry. In all households, height and weight measurements were recorded for children age 0-59 months, women age 15-49 years, and men age 15-59.

Anaemia testing. Blood specimens were collected for anaemia testing from all children age 6-59 months, women age 15-49 years and men age 15-59 years who voluntarily consented to the testing. Blood samples were drawn from a drop of blood taken from a finger prick (or a heel prick in the case of young children with small fingers) and collected in a microcuvette. Haemoglobin analysis was carried out on site using a battery-operated portable HemoCue analyzer. Results were given verbally and in writing. Parents of children with a haemoglobin level under 7 g/dl were instructed to take the child to a health facility for follow-up care. Likewise, non-pregnant women, pregnant women, and men were referred for follow-up care if their haemoglobin level was below 7 g/dl, 9 g/dl and 9 g/dl, respectively. All households in which anaemia testing was conducted were given a brochure explaining the causes and prevention of anaemia. Anaemia data were adjusted for altitude prior to being tabulated.

HIV testing. Blood specimens were collected by the EDHS biomarker technicians for laboratory testing of HIV from all women age 15-49 and men age 15-59 who consented to the test. The protocol

for the blood specimen collection and analysis was based on the anonymous linked protocol developed for MEASURE DHS. This protocol allows for the merging of the HIV test results with the socio-demographic data collected in the individual questionnaires, after all information that could potentially identify an individual is destroyed.

Interviewers explained the procedure, the confidentiality of the data, and the fact that the test results would not be made available to the respondent. If a respondent consented to the HIV testing, five blood spots from the finger prick were collected on a filter paper card to which a barcode label unique to the respondent was affixed. Respondents were asked whether they consented to having the laboratory store their blood sample for future unspecified testing. If the respondent did not consent to additional testing using their sample the words 'no additional testing' were written on the filter paper card. Each household, whether individuals consented to HIV testing or not, was given an informational brochure on HIV/AIDS and a list of fixed sites providing voluntary counselling and testing (VCT) services in surrounding waredas within the region. For households farther than 10 km from a fixed VCT site, mobile VCT units were set up in or near survey areas following data collection.

Each blood sample was given a barcode label, with a duplicate label attached to the Biomarker Data Collection Form. A third copy of the same barcode was affixed to the Blood Sample Transmittal Form to track the blood samples from the field to the laboratory. Blood samples were dried overnight and packaged for storage the following morning. Samples were periodically collected in the field, along with the completed questionnaires, and transported to CSA in Addis Ababa to be logged in, and checked; blood samples were then transported to the Ethiopia Health and Nutrition Research Institute (EHNRI) in Addis Ababa.

Upon arrival at EHNRI, each blood sample was logged into the CSPro HIV Test Tracking System (CHTTS) database, given a laboratory number, and stored at -20˚C until tested. The HIV testing protocol stipulates that testing of blood can only be conducted after the questionnaire data entry is completed, verified, and cleaned, and all unique identifiers are removed from the questionnaire file except the anonymous barcode number. As of this preliminary report, HIV testing has not yet begun. The testing algorithm calls for testing all samples on the first ELISA assay test, the Vironostika® HIV Uni-Form II Plus O (Biomerieux). A negative result is rendered negative. All positives will be subjected to a second ELISA, the Murex HIV Ag/Ab Combination. Positive samples on both tests are rendered positive. If the first and second tests are discordant, a third confirmatory test, the HIV 2.2 western blot (DiaSorin), will be conducted to resolve the discordance. The final result will be rendered positive if the western blot confirms the result to be positive and rendered negative if the western blot confirms it to be negative. If the western blot results are indeterminate, the sample will be rendered indeterminate.

Upon finalizing HIV testing, the HIV test results for the 2011 EDHS will be entered into the CHTTS database with a barcode as the unique identifier to the result. The barcode will be used to link the HIV test results with the data from the individual interviews. Data from the HIV results and linked demographic and health data will be published in the 2011 EDHS Final Report.

D. Training of Field Staff

CSA staff and a variety of experts from government ministries, NGOs, and donor organizations participated in a three-week pretest training and fieldwork conducted from 20 September–8 October 2010. Fifty-five participants were trained to administer paper questionnaires, take anthropometric measurements, and collect blood samples for anaemia and HIV testing. Representatives from the Ethiopia Health and Nutrition Research Institute (EHNRI) assisted in training participants on the finger prick for blood collection, and proper handling and storage of the dried blood spots (DBS) for HIV testing. The pretest fieldwork was conducted over five days, covering approximately 191 households. Debriefing sessions were held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise.

CSA recruited and trained 307 people for the main fieldwork to serve as supervisors, editors, male and female interviewers, and reserve interviewers. Training of field staff for the main survey was conducted during a four-week period in late November and December 2010. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of the questionnaire content, instruction and practice in weighing and measuring children, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the 2011 EDHS sample points. Field practice in anthropometry, anaemia testing and blood sample collection was also carried out for interviewers who were assigned as team biomarker technicians. Team supervisors and editors were trained in data quality control procedures and fieldwork coordination.

E. Fieldwork

Thirty-five interviewing teams carried out data collection for the 2011 EDHS. Each team consisted of one team supervisor, one field editor, four female interviewers, two male interviewers, one cook and one driver. Ten staff members from CSA coordinated and supervised fieldwork activities. An ICF Macro technical specialist, an ICF Macro consultant, and representatives from other organizations supporting the survey including EHNRI, CDC, and USAID participated in fieldwork monitoring. In addition to the field teams, a quality control team was present in each of the 11 regions. Each quality control team included a field coordinator, one female and one male interview quality control staff and one biomarker quality control staff. The quality control teams regularly visited, and often stayed with, the EDHS teams throughout the fieldwork period to supervise and monitor teams. Data collection took place over a five month period, from 27 December 2010 through 3 June 2011.

F. Data Processing

All questionnaires for the 2011 EDHS were returned to CSA headquarters office in Addis Ababa for data processing, which consisted of office editing, coding of open-ended questions, data entry, and editing computer-identified errors. The data were processed by a team of 32 data entry operators, 6 office editors, and 4 data entry supervisors. Data entry and editing were accomplished using the CSPro software. The processing of data was initiated in January 2011 and completed in June 2011.

III. RESULTS

A. Response Rates

The household and individual response rates for the 2011 EDHS are shown in Table 1. A total of 17,817 households were selected for inclusion in the 2011 EDHS, and of these, 17,018 were found to be occupied. Of the 17,018 occupied households, 16,702 were successfully interviewed, yielding a response rate of 98 percent.

In the interviewed households, a total of 17,385 women were identified to be eligible for the individual interview, and 95 percent of them were successfully interviewed. For men, 15,908 were identified as eligible for interview, and 89 percent of them were successfully interviewed.

As was the pattern in previous EDHS, the response rates were higher for rural than urban areas, especially among men.

Table 1. Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Ethiopia 2011

Result	Residence		
	Urban	Rural	Total
Household interviews			
Households selected	5,518	12,299	17,817
Households occupied	5,272	11,746	17,018
Households interviewed	5,112	11,590	16,702
Household response rate[1]	97.0	98.7	98.1
Interviews with women age 15-49			
Number of eligible women	5,656	11,729	17,385
Number of eligible women interviewed	5,329	11,186	16,515
Eligible women response rate[2]	94.2	95.4	95.0
Interviews with men age 15-59			
Number of eligible men	5,062	10,846	15,908
Number of eligible men interviewed	4,216	9,894	14,110
Eligible men response rate[2]	83.3	91.2	88.7

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

B. Characteristics of the Respondents

Table 2 shows the distribution of women and men age 15-49 years in the 2011 EDHS sample, by background characteristics. The size of the population steadily declines with increasing age. Forty-two percent of both women and men are 15 to 24 years old.

Women who are in union (i.e., currently married or living with a man) constitute over three-fifths of all interviewed women (62 percent), and over half of men age 15-49 are currently in union (54 percent). The proportion of men age 15-49 who have never been married is higher than that of women who have never been married, 44 percent compared with 27 percent.

Table 2 also shows that over three-quarters of women (76 percent) and men (78 percent) live in rural areas. The three most populous regions are Oromiya, Amhara, and SNNP, where the majority of women and men live.

Educational attainment in Ethiopia varies by sex. More women have never attended formal education than men (51 percent of women and 30 percent of men). More than half of men have attended primary school only, compared to 38 percent of women. Smaller percentages of women and men have attended secondary school or higher. Less than 10 percent of men and women have attended secondary school, and 4 percent of women and 7 percent of men have more than a secondary education.

The distribution of respondents by religion shows that almost half of all respondents are Orthodox (48 percent of both women and men), while 28 percent of women and 30 percent of men are Muslims. The Oromo are the largest ethnic group, making up one-third of female and 36 percent of male respondents, followed by the Amhara (33 percent of women and 32 percent of men).

Table 2. Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Ethiopia 2011

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	24.3	4,009	3,835	23.5	3,013	2,832
20-24	17.7	2,931	3,022	18.1	2,319	2,330
25-29	19.1	3,147	3,185	17.9	2,297	2,274
30-34	12.4	2,054	2,100	11.6	1,483	1,682
35-39	11.6	1,916	1,958	12.8	1,648	1,579
40-44	7.6	1,261	1,314	8.7	1,121	1,210
45-49	7.2	1,196	1,101	7.4	952	961
Marital status						
Never married	27.1	4,469	4,413	43.6	5,600	5,641
Married	58.1	9,594	9,478	51.5	6,610	6,427
Living together	4.2	694	726	2.0	261	348
Divorced/separated	7.4	1,222	1,317	2.5	322	383
Widowed	3.2	536	581	0.3	41	69
Residence						
Urban	23.9	3,947	5,329	22.5	2,882	3,915
Rural	76.1	12,568	11,186	77.5	9,952	8,953
Region						
Tigray	6.7	1,104	1,728	6.0	770	1,235
Affar	0.9	145	1,291	0.8	101	910
Amhara	26.8	4,433	2,087	27.1	3,481	1,739
Oromiya	36.4	6,011	2,135	38.6	4,957	1,889
Somali	2.0	329	914	1.9	245	653
Benishangul-Gumuz	1.1	174	1,259	1.1	138	1,047
S.N.N.P	19.6	3,236	2,034	18.0	2,307	1,550
Gambela	0.4	69	1,130	0.5	59	865
Harari	0.3	49	1,101	0.3	40	898
Addis Ababa	5.4	896	1,741	5.3	682	1,237
Dire Dawa	0.4	69	1,095	0.4	53	845
Education						
No education	50.8	8,394	8,278	29.5	3,785	3,659
Primary	38.0	6,276	5,858	53.1	6,813	6,334
Secondary	6.8	1,117	1,395	10.1	1,296	1,565
More than secondary	4.4	728	984	7.3	940	1,310
Religion						
Orthodox	47.5	7,847	6,995	47.8	6,140	5,514
Catholic	1.1	179	177	0.9	120	125
Protestant	22.0	3,634	2,936	19.2	2,459	2,071
Muslim	27.8	4,588	6,170	29.6	3,796	4,876
Other	1.5	254	229	2.5	317	280
Missing	0.0	8	8	0.0	2	2
Ethnic group						
Affar	0.7	110	1,055	0.6	73	699
Amhara	32.5	5,364	4,232	31.7	4,064	3,264
Guragie	3.1	520	692	2.7	345	513
Nuwer	0.1	12	364	0.1	8	219
Oromo	32.5	5,362	3,853	35.9	4,607	3,280
Sidamo	3.6	602	380	3.8	487	336
Somali	1.9	316	969	1.8	225	741
Tigray	6.9	1,134	1,838	6.4	820	1,354
Welaita	3.2	528	344	2.9	368	277
Other	15.1	2,501	2,715	13.9	1,788	2,133
Missing	0.4	66	73	0.4	50	52
Total 15-49	100.0	16,515	16,515	100.0	12,834	12,868
Men 50-59	na	na	na	na	1,276	1,242
Total 15-59	na	na	na	na	14,110	14,110

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

C. Fertility

To generate data on fertility, all women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth in their lifetime. To ensure all information was reported, women were asked separately about children still living at home, those living elsewhere, and those who had died. A complete birth history was then obtained, including information on sex, date of birth, and survival status of each child; age at death for dead children was also recorded.

Table 3 shows age-specific fertility rates of women by five-year age groups for the three-year period preceding the survey. Age-specific and total fertility rates were calculated directly from the birth history data. The sum of age-specific fertility rates (known as the total fertility rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as 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, an Ethiopian woman would bear an average of 4.8 children in her lifetime. This represents a decrease of 0.6 children in the five years since the 2005 EDHS, when the TFR was 5.4 births per woman. Fertility is substantially higher among rural women than among urban women; rural women will give birth to nearly three more children during their reproductive years than urban women (5.5 and 2.6, respectively).

Table 3. Current Fertility

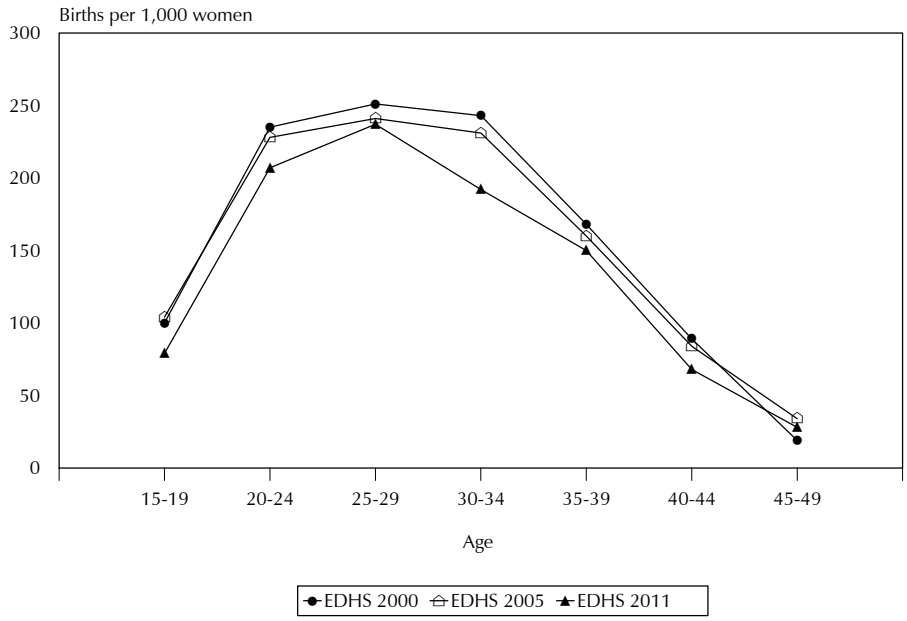
Age-specific rates and total fertility rate, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, Ethiopia 2011

	Residence		
Age group	Urban	Rural	Total
15-19	27	99	79
20-24	123	236	207
25-29	158	262	237
30-34	101	218	192
35-39	75	171	150
40-44	21	77	68
45-49	22	29	28
TFR (15-49)	2.6	5.5	4.8
GFR	89	184	161
CBR	26.4	36.2	34.5

Notes: Age-specific fertility rates are per 1,000 women. Rates for age group 45-49 may be slightly biased due to truncation. Rates are for the period 1-36 months prior to interview.
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 shows the trends in age-specific fertility rates between the 2000 EDHS, 2005 EDHS and 2011 EDHS surveys. The 2011 TFR estimate (4.8) shows a decline in TFR from the estimates reported in the 2005 EDHS (5.4) and the 2000 EDHS (5.5). The decline in fertility in the last five years is due to a decrease in fertility in rural areas; among rural women the TFR decreased from 6.0 children in the 2005 EDHS to the current level of 5.5.

Figure 1 **Trends in Age-Specific Fertility Rates**



D. 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 women (pregnant or not) on whether they want to have another child, and if so, how soon.

Table 4 shows that 17 percent of women want to have another child soon (within the next two years) and 38 percent want to have another child later (in two or more years). Thirty-seven percent of women want no more children.

Fertility preference is closely related to the number of living children. More than half of women with no living children (55 percent) want a child soon, compared with only 7 percent of women with six or more children. The more children a woman has, the higher the likelihood that she does not want another child.

Table 4. 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, Ethiopia 2011

	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Total
Have another soon[2]	55.4	23.9	17.1	14.9	12.1	8.2	6.7	16.9
Have another later[3]	34.1	61.2	53.8	44.6	37.9	27.5	13.7	38.2
Have another, undecided when	4.0	2.4	3.0	2.1	2.2	1.7	1.7	2.3
Undecided	1.0	2.9	3.1	3.9	3.7	4.8	4.3	3.5
Want no more	3.4	9.1	21.4	31.9	41.4	55.8	68.6	36.5
Sterilized[4]	0.0	0.0	0.5	0.4	0.7	0.5	0.7	0.5
Declare infecund	2.1	0.4	0.9	2.1	1.5	1.5	4.0	1.9
Missing	0.0	0.0	0.3	0.0	0.4	0.0	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	806	1,490	1,746	1,529	1,302	1,164	2,251	10,287

[1] The number of living children includes 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

E. Family Planning

Family planning refers to a conscious effort by a couple to limit or space the number of children they have through the use of contraceptive methods. Information about the knowledge of family planning methods was collected from female and male respondents by asking them if they had heard of various specific methods by which a couple can delay or avoid a pregnancy. Respondents were also asked if they were currently using a method, and if so, which method they were using, and where they had obtained the method they were using.

Contraceptive methods are classified as modern or traditional methods. Modern methods include female sterilization, male sterilization, the pill, the intrauterine device (IUD), injectables, implants, male condom, female condom, diaphragm/foam/jelly, standard days method and lactational amenorrhoea method (LAM). Methods such as rhythm (periodic abstinence), withdrawal, and folk methods are grouped as traditional.

Table 5 shows the percent distribution of currently married women by the contraceptive method currently being used. Overall, 29 percent of currently married women are currently using a method of family planning, and nearly all use is a modern method; only one percent of currently married women are using a traditional method. The most popular methods are injectables (used by 21 percent of currently married women) and implants (3 percent). Two percent of married women reported using an

IUD and less than 1 percent reported having been sterilized, using the pill, or male condoms. The contraceptive prevalence rate (CPR) increases from age 15-19 to 20-24, and then declines to 13 percent among women 45-49 years.

The CPR in Ethiopia observed in the 2011 EDHS has doubled from that reported in the 2005 EDHS (29 percent compared to 15 percent). While CPR among urban women has only slightly increased in the last five years (47 to 53 percent), CPR has doubled from 11 percent in 2005 to 23 percent in 2011 among rural women.

There are large differences in levels of contraceptive use by region. Addis Ababa has the highest CPR at 63 percent. While about one-third of married women in Amhara, Gambela, Harari, and Dire Dawa are using a method, the corresponding rate in both Affar and Somali is below 10 percent.

Table 5. Current use of contraception by background characteristics

Percent distribution of currently married women age 15-49 by contraceptive method currently used, according to background characteristics, Ethiopia 2011

			Modern method								Traditional method					
Background characteristic	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Other[1]	Any traditional method	Rhythm	Withdrawal	Other	Not currently using	Total	Number of women
Age																
15-19	23.8	23.0	0.0	0.0	2.5	18.9	1.6	0.0	0.0	0.8	0.8	0.0	0.0	76.2	100.0	765
20-24	34.8	33.4	0.0	0.1	1.9	28.5	2.9	0.0	0.0	1.4	1.1	0.3	0.0	65.2	100.0	1,762
25-29	29.9	28.9	0.1	0.5	2.2	21.7	4.2	0.2	0.0	1.1	0.8	0.3	0.0	70.1	100.0	2,511
30-34	33.1	31.2	0.1	0.2	2.7	23.9	3.8	0.5	0.0	1.9	1.5	0.2	0.3	66.9	100.0	1,720
35-39	29.1	28.0	1.1	0.8	2.2	19.7	4.1	0.1	0.0	1.1	0.9	0.1	0.0	70.9	100.0	1,591
40-44	23.9	22.1	1.6	0.5	2.3	13.5	3.6	0.4	0.2	1.8	0.8	1.0	0.0	76.1	100.0	1,033
45-49	13.1	12.5	1.0	0.1	0.3	9.2	2.0	0.0	0.0	0.6	0.3	0.2	0.0	86.9	100.0	905
Residence																
Urban	52.5	49.5	1.5	0.9	6.7	35.4	3.8	1.0	0.1	3.0	2.4	0.6	0.0	47.5	100.0	1,843
Rural	23.4	22.5	0.2	0.2	1.1	17.6	3.3	0.0	0.0	0.9	0.6	0.2	0.1	76.6	100.0	8,444
Region																
Tigray	22.2	21.2	0.3	0.0	2.1	12.8	5.6	0.5	0.0	1.0	0.8	0.1	0.1	77.8	100.0	620
Affar	9.5	9.1	0.0	0.0	1.3	7.6	0.2	0.0	0.0	0.4	0.2	0.2	0.1	90.5	100.0	104
Amhara	33.9	33.0	0.6	0.3	1.5	26.5	4.0	0.0	0.1	0.9	0.5	0.3	0.1	66.1	100.0	2,776
Oromiya	26.2	24.9	0.2	0.3	2.2	18.8	3.4	0.1	0.0	1.3	1.1	0.2	0.0	73.8	100.0	3,961
Somali	4.3	3.8	0.0	0.0	0.8	2.0	0.5	0.4	0.0	0.5	0.5	0.0	0.0	95.7	100.0	232
Benishangul-Gumuz	27.0	26.3	0.6	0.0	2.7	21.2	1.5	0.3	0.0	0.7	0.6	0.1	0.0	73.0	100.0	124
S.N.N.P	25.8	24.7	0.5	0.3	1.4	19.5	2.9	0.1	0.0	1.1	0.7	0.4	0.1	74.2	100.0	2,022
Gambela	33.8	33.2	0.5	0.7	4.4	26.4	0.4	0.8	0.0	0.6	0.6	0.0	0.0	66.2	100.0	41
Harari	34.7	31.5	0.3	1.2	6.7	19.2	3.0	1.0	0.1	3.3	2.9	0.3	0.0	65.3	100.0	28
Addis Ababa	62.5	56.3	2.3	2.6	10.9	35.8	2.8	2.0	0.0	6.1	5.1	0.9	0.1	37.5	100.0	342
Dire Dawa	33.9	31.7	0.2	1.1	4.7	15.3	8.0	2.1	0.2	2.2	2.0	0.1	0.0	66.1	100.0	38
Education																
No education	22.2	21.8	0.4	0.1	0.9	16.9	3.4	0.0	0.0	0.4	0.2	0.1	0.1	77.8	100.0	6,735
Primary	35.7	33.7	0.4	0.6	2.8	26.5	3.2	0.1	0.0	2.0	1.4	0.6	0.0	64.3	100.0	2,862
Secondary	57.6	53.4	0.8	0.7	9.1	36.0	5.1	1.8	0.0	4.1	3.3	0.9	0.0	42.4	100.0	378
More than secondary	67.8	57.2	1.3	1.9	12.7	34.2	4.4	2.0	0.7	10.6	8.9	1.6	0.2	32.2	100.0	313
Number of living children																
0	23.4	21.1	0.0	0.0	3.0	16.9	0.9	0.3	0.0	2.4	2.2	0.1	0.0	76.6	100.0	1,018
1-2	35.3	33.9	0.3	0.4	2.7	27.2	3.0	0.3	0.0	1.3	0.9	0.4	0.0	64.7	100.0	3,193
3-4	29.7	28.4	0.5	0.5	2.2	20.8	4.1	0.2	0.1	1.4	0.8	0.4	0.2	70.3	100.0	2,809
5+	22.8	22.0	0.7	0.3	1.2	15.6	4.1	0.0	0.0	0.8	0.6	0.2	0.0	77.2	100.0	3,267
Total	28.6	27.3	0.5	0.3	2.1	20.8	3.4	0.2	0.0	1.3	0.9	0.3	0.1	71.4	100.0	10,287

Note: If more than one method is used, only the most effective method is considered in this tabulation.
[1] Includes standard days method, lactational amenorrhea method (LAM), female condom, and diaphragm/foam/jelly

Contraceptive use increases with educational attainment; 22 percent of women with no education use a method of family planning, compared to 68 percent of women with a secondary education or higher. The relationship between contraceptive use and number of living children a woman has is not linear. Twenty-three percent of women who have no children are currently using family planning, compared with 35 percent of women with 1-2 children and 30 percent of women with three or four children. The CPR returns to 23 percent for women with five or more children.

F. Need for Family Planning

Family planning methods can be used to space or limit childbearing. Women who indicate that they either want no more children or want to wait for two or more years before having another child, but are not using contraception, are a group identified as having an *unmet need* for family planning. Women who are currently using a family planning method are said to have a *met need* for family planning. Women with an unmet need for family planning and those who are currently using contraception together constitute the *total demand* for family planning. This information is important not only to determine the total demand but also to measure the percentage of that demand that is satisfied.

Table 6 shows unmet need, met need, and total demand for family planning among currently married women. Overall, 25 percent of currently married women have an unmet need for family planning (16 percent for spacing and 9 percent for limiting). Unmet need is highest among women 15-19 (33 percent) and lowest among women age 45-49 (15 percent). Unmet need for spacing is highest in the 15-19 age group where 30 percent of women have an unmet need for spacing their births. On the other hand, unmet need for limiting is highest in the 40-44 age group, with 20 percent of women wanting no more children but not using family planning. It is notable that up to age 29, a sizeable proportion of unmet need for family planning is for spacing purposes. After age 35, most unmet need is for limiting childbearing.

The table also shows that a higher proportion of women in rural areas (28 percent) have an unmet need for family planning (18 percent for spacing and 9 percent for limiting) compared with urban women (15 percent), whose unmet need for both spacing births and limiting childbearing is 8 percent and 7 percent respectively. At the regional level, total unmet need for family planning is highest in Oromiya (30 percent) and lowest in Addis Ababa (11 percent). Fifty-three percent of currently married women in Ethiopia report that their demand for family planning is satisfied, over 50 percent of demand is satisfied by modern methods.

Table 6. Need and demand for family planning among currently married women

Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, the total demand for family planning, the percentage of the demand for contraception that is satisfied, and the percentage of the demand for contraception satisfied by modern methods, by background characteristics, Ethiopia 2010

	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning					
Background characteristic	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total	Percentage of demand satisfied	Percentage of demand satisfied by modern methods	Number of women
Age												
15-19	30.3	2.4	32.8	22.5	1.2	23.8	52.9	3.6	56.5	42.0	40.6	765
20-24	20.3	1.5	21.8	29.6	5.3	34.8	49.8	6.8	56.6	61.6	59.0	1,762
25-29	21.5	5.1	26.6	20.6	9.3	29.9	42.1	14.4	56.5	53.0	51.1	2,511
30-34	15.8	9.8	25.6	16.1	16.9	33.1	31.9	26.8	58.7	56.4	53.1	1,720
35-39	11.6	15.8	27.4	9.3	19.8	29.1	20.9	35.6	56.4	51.5	49.6	1,591
40-44	7.8	19.9	27.7	3.5	20.5	23.9	11.2	40.4	51.6	46.4	42.9	1,033
45-49	1.5	13.7	15.2	1.4	11.7	13.1	3.0	25.3	28.3	46.3	44.3	905
Residence												
Urban	8.1	6.9	15.0	31.3	21.2	52.5	39.4	28.1	67.5	77.8	73.3	1,843
Rural	18.1	9.4	27.5	13.1	10.3	23.4	31.2	19.7	50.9	46.0	44.2	8,444
Region												
Tigray	15.0	7.0	22.0	15.1	7.1	22.2	30.1	14.1	44.2	50.3	48.0	620
Affar	12.4	3.7	16.0	6.9	2.6	9.5	19.2	6.3	25.5	37.2	35.5	104
Amhara	12.4	9.7	22.1	19.4	14.5	33.9	31.8	24.2	56.0	60.6	58.9	2,776
Oromiya	20.7	9.2	29.9	15.2	11.0	26.2	35.9	20.2	56.1	46.7	44.4	3,961
Somali	20.9	3.1	24.0	3.3	1.0	4.3	24.2	4.1	28.3	15.3	13.5	232
Benishangul-Gumuz	15.3	9.2	24.5	16.3	10.7	27.0	31.6	19.9	51.5	52.5	51.1	124
S.N.N.P	15.2	9.8	25.0	12.7	13.1	25.8	27.9	22.9	50.8	50.9	48.6	2,022
Gambela	12.9	5.8	18.8	21.4	12.3	33.8	34.4	18.2	52.6	64.3	63.1	41
Harari	14.8	9.3	24.1	20.4	14.3	34.7	35.2	23.6	58.8	59.0	53.5	28
Addis Ababa	5.3	5.3	10.6	39.8	22.7	62.5	45.1	28.0	73.1	85.5	77.1	342
Dire Dawa	16.4	5.0	21.3	21.0	12.9	33.9	37.3	17.9	55.2	61.4	57.4	38
Education												
No education	16.3	10.0	26.3	10.8	11.4	22.2	27.1	21.4	48.4	45.8	45.0	6,735
Primary	18.5	8.2	26.7	22.3	13.4	35.7	40.8	21.5	62.3	57.2	54.1	2,862
Secondary	9.7	3.0	12.7	42.0	15.6	57.6	51.7	18.5	70.2	82.0	76.1	378
More than secondary	5.5	1.5	7.0	51.0	16.8	67.8	56.5	18.3	74.8	90.6	76.5	313
Total	16.3	9.0	25.3	16.4	12.2	28.6	32.7	21.2	53.9	53.1	50.7	10,287

[1] Unmet need for spacing: Includes women who are fecund and not using family planning and who say they want to wait two or more years for their next birth, or who say they are unsure whether they want another child, or who want another child but are unsure when to have the child. In addition, unmet need for spacing includes pregnant women whose current pregnancy was mistimed, or whose last pregnancy was unwanted but who now say they want more children. Unmet need for spacing also includes amenorrhoeic women whose last birth was mistimed, or whose last birth was unwanted but who now say they want more children. Unmet need for limiting: Includes women who are fecund and not using family planning and who say they do not want another child. In addition, unmet need for limiting includes pregnant women whose current pregnancy was unwanted but who now say they do not want more children or who are undecided whether they want another child. Unmet need for limiting also includes amenorrheic women whose last birth was unwanted but who now say they do not want more children or who are undecided whether they want another child.

[2] Using for spacing is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for limiting is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account here

G. 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 questionnaire administered to individual women. The section begins with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the mother, the number who live elsewhere, and the number who have died). Table 7 presents estimates for three successive five-year periods prior to the 2011 EDHS. The rates

are estimated directly from the information in the birth history on a child's birth date, survivorship status, and age at death for children who died. This information is used to directly estimate the following five mortality rates:

Neonatal mortality:	the probability of dying within the first month of life
Post-neonatal mortality:	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 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 12 months of age.

For the five years immediately preceding the survey (corresponding roughly to 2006–2010); the infant mortality rate was 59 deaths per 1,000 live births. The estimate of child mortality is 31 deaths per 1,000 children surviving to 12 months of age, while the overall under-5 mortality rate for the same period is 88 deaths per 1,000 live births. Sixty-seven percent of all deaths to children under-five in Ethiopia take place before a child's first birthday.

The 2011 EDHS shows a rapid decrease in infant and under-five mortality during the five years prior to the survey compared to the period 5-9 years prior. The levels are also considerably lower than those reported in the 2005 EDHS. For example, infant mortality has decreased by 23 percent, from 77 to 59 deaths per 1,000 births, while under-five mortality has decreased by 28 percent, from 123 to 88 per 1,000 births. Further investigation of this pattern will be discussed in the 2011 EDHS Final Report.

Table 7. Early childhood mortality rates

Neonatal, post-neonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Ethiopia 2011

Years preceding the survey	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
0-4	37	22	59	31	88
5-9	48	40	88	49	133
10-14	54	47	101	72	166

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

H. Maternal Care

Proper care during pregnancy and delivery is important for the health of both the mother and the baby, and is the fifth Millennium Development Goal (MDG). In the 2011 EDHS, women who had given birth in the five years preceding the survey were asked a number of questions about maternal care. Mothers were asked whether they had received tetanus toxoid injections while pregnant and whether they had obtained antenatal care during the pregnancy for their most recent live birth in the last five years. For each live birth over the same period, the mothers were also asked what type of assistance they received at the time of delivery. Table 8 summarizes information on the coverage of these maternal health services.

Table 8. Maternal care indicators

Among women age 15-49 who had a live birth in the five years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, percentage with antenatal care from a health extension worker for the last live birth, and percentage whose last live birth was protected against neonatal tetanus, and among all live births in the five years before the survey, percentage delivered by a skilled provider, percentage delivered by a health extension worker, and percentage delivered in a health facility, by background characteristics, Ethiopia 2011

Background characteristic	Percentage with antenatal care from a skilled provider[1]	Percentage with antenatal care from a health extension worker	Percentage whose last live birth was protected against neonatal tetanus[2]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered by a health extension worker	Percentage delivered in a health facility	Number of births
Mother's age at birth								
<20	33.5	9.6	43.0	954	9.6	1.4	9.6	1,538
20-34	35.5	9.9	49.8	5,630	10.9	0.9	10.7	8,663
35+	27.0	11.6	45.7	1,324	5.9	0.7	6.4	1,672
Residence								
Urban	76.0	1.2	67.5	1,188	50.8	1.3	49.8	1,528
Rural	26.4	11.7	44.9	6,720	4.0	0.8	4.1	10,344
Region								
Tigray	50.1	17.6	68.0	530	11.6	1.4	11.6	753
Affar	32.3	2.7	26.7	78	7.2	0.0	6.8	121
Amhara	33.6	8.4	43.2	1,991	10.1	0.6	10.2	2,656
Oromiya	31.3	9.1	45.9	3,116	8.1	0.9	8.0	5,014
Somali	21.5	6.3	33.7	198	8.4	0.4	7.6	364
Benishangul-Gumuz	35.1	6.5	48.1	92	8.9	1.3	9.1	140
S.N.N.P	27.3	14.2	50.8	1,634	6.1	1.2	6.2	2,494
Gambela	54.5	1.5	58.4	31	27.4	0.5	27.5	40
Harari	55.9	5.8	69.5	19	32.5	0.2	32.4	29
Addis Ababa	93.6	0.7	82.3	193	83.9	0.4	82.3	222
Dire Dawa	57.2	6.0	58.7	26	40.3	0.9	39.7	39
Mother's education								
No education	25.1	9.9	40.8	5,270	4.6	0.8	4.7	8,227
Primary	45.5	11.5	60.5	2,270	15.4	1.1	14.9	3,211
Secondary	85.5	4.9	78.1	226	72.4	0.6	69.6	266
More than secondary	90.9	3.9	82.5	142	74.1	3.9	75.5	168
Total	33.9	10.1	48.3	7,908	10.0	0.9	9.9	11,872

[1] Skilled provider includes doctor, nurse, midwife, or other health personnel
[2] Includes mothers with two injections during the pregnancy of her last live birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last live birth), or four or more injections (the last within ten years of the last live birth), or five or more injections at any time prior to the last live birth

Antenatal Care

Antenatal care (ANC) from a trained provider is important to monitor the pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy and delivery. The 2011 EDHS results show that 34 percent of women who gave birth in the five years preceding the survey received antenatal care from a trained health professional at least once for their last birth. Antenatal care from a trained health professional has increased by 6 percent since the 2005 EDHS estimate (28 percent). Urban women are twice as likely to have received ANC from a health professional than rural women (76 percent vs. 26 percent). Antenatal care is most common among women with higher than secondary education (91 percent) and those living in Addis Ababa (94 percent). Ten percent of women receive antenatal care from a health extension worker (HEW). The majority of women who receive antenatal care from a HEW live in rural areas (12 percent) and the Tigray and SNNP regions (18 percent and 14 percent, respectively).

Tetanus Toxoid

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries, often due to failure to observe hygienic procedures during delivery. Table 8 indicates that 48 percent of last births were protected against neonatal tetanus, a large increase from the 2005 EDHS estimate (32 percent). Births to mothers in Addis Ababa (82 percent) and Harari (70 percent) are most likely to be protected against neonatal tetanus compared with births to mothers in Affar (27 percent). Nationally, protection against neonatal tetanus has increased from 32 percent in 2005.

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, W., and V. De Brouwere, 2001; WHO, 2006). Table 8 shows that 10 percent of women reported that their most recent live birth in the last five years was delivered by a health professional. Ten percent of births were delivered in a health facility, a doubling of the level reported in the 2005 EDHS (5 percent).

Fifty-one percent of births to urban mothers were attended by a health professional and 50 percent were delivered in a health facility, compared with 5 percent and 4 percent, respectively, of births to rural women. Mothers residing in Addis Ababa are the most likely to be attended to at delivery by a health professional (84 percent) and the most likely to deliver in a health facility (82 percent) compared with mothers of other regions.

Mothers' educational status is highly correlated with whether delivery is assisted by a health professional and whether the birth is delivered in a health facility. For example, 5 percent of births to mothers with no education were attended by a health professional and delivered in a health facility compared with between 70 and 72 percent of births to mothers with some secondary education. Less than one percent of women were attended by a HEW at delivery.

I. Child Health and Nutrition

The 2011 EDHS collected data on a number of key child health indicators, including immunization of young children, infant feeding practices, and treatment practices when a child is ill.

Vaccination of Children

According to the World Health Organization (WHO), a child is considered fully vaccinated if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus (DPT); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The 2011 EDHS collected information on the coverage for these vaccinations among all children born in the five years preceding the survey. In Ethiopia, since 2007, three doses of pentavalent vaccine (DPT-HepB-Hib) are given in place of the three doses of DPT vaccine. BCG vaccine should be given at birth, and pentavalent and polio vaccines should be given at approximately 3, 4, and 5 months of age. Measles vaccine should be given at or soon after the child reaches nine months of age. It is also recommended that children receive the complete schedule of vaccinations before their first birthday, and that the vaccinations be recorded on a vaccination card that is given to the parents or guardians.

In the 2011 EDHS, information on vaccination coverage was obtained in two ways—from health cards and from mothers' verbal reports. All mothers were asked to show the interviewer the health cards for all children born since January 2005 where immunization dates are recorded. If the card was available, the interviewer then recorded from the cards the dates of each vaccination received onto the questionnaire. If a child never received a health card, or if the mother was unable to show the card to

the interviewer, the child's vaccination information was based on the mother's recall. The mother was asked to recall whether the child had received BCG, polio, DPT/pentavalent and measles vaccines. If she indicated that the child had received the polio or DPT/pentavalent vaccines, she was asked about the number of doses that the child received. The mother was then asked whether the child had received other vaccinations that were not recorded on the card, and if so, they too were recorded. The results presented here are based on both health card information and, for those children without a card, information provided by the mother.

Table 9 pertains to children age 12-23 months, the age by which they should have received all vaccinations. Mothers were able to produce health cards for 29 percent of these children. Overall, 24 percent of children age 12-23 months are fully vaccinated. Basic vaccination coverage has increased by 4 percent since the 2005 EDHS estimate (20 percent). Over 66 percent of children received BCG, 82 percent of children received the first dose of polio vaccine, and 64 percent of children received the first dose of DPT/pentavalent. Coverage rates for all three of these vaccines have increased since the 2005 EDHS estimates. Thirty-seven percent of children completed the required three doses of the DPT/pentavalent and 44 percent completed the required polio vaccines. Coverage of vaccination against measles is 56 percent. Overall, 15 percent of children in Ethiopia have not received any vaccinations. This represents an improvement from 2005 when 24 percent of children were reported to have not received any vaccinations.

Children in urban areas are more than twice as likely as rural children to be fully vaccinated (48 percent compared with 20 percent, respectively). Regionally, children with full vaccination coverage range from a high of 79 percent in Addis Ababa and 59 percent in Tigray and Dire Dawa to a low of 9 percent in Affar.

Table 9. Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey by source of information (vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics, Ethiopia 2011

Background characteristic	BCG	DPT containing vaccine[1]			Polio[2]				Measles	All basic vaccinations[3]	No vaccinations	Percentage with a vaccination card	Number of children
		1	2	3	0	1	2	3					
Sex													
Male	64.3	60.4	49.6	34.3	18.7	81.9	68.6	42.3	55.7	23.1	15.0	26.0	1,010
Female	68.5	67.0	55.4	38.8	20.9	82.8	71.6	46.5	55.7	25.7	15.1	31.6	920
Residence													
Urban	81.6	79.8	73.9	60.5	53.7	89.1	82.2	65.7	79.6	48.1	8.7	54.8	274
Rural	63.8	60.9	48.8	32.5	14.1	81.2	68.0	40.8	51.8	20.4	16.1	24.4	1,656
Region													
Tigray	95.9	93.8	88.6	73.4	28.8	97.4	90.8	76.4	83.7	58.9	1.8	58.3	129
Affar	38.1	30.4	16.8	10.3	10.6	51.0	33.1	18.4	30.3	8.6	47.6	13.5	18
Amhara	67.7	68.6	53.6	38.4	18.1	86.5	76.6	47.0	62.0	26.3	11.2	31.1	446
Oromiya	57.4	50.4	41.0	26.8	15.5	77.0	61.5	35.8	45.9	15.6	19.7	22.9	811
Somali	45.7	41.4	34.9	25.3	18.9	59.8	48.4	27.9	39.5	16.6	35.4	23.7	51
Benishangul-Gumuz	68.7	73.3	62.2	41.7	36.4	85.5	75.8	45.7	67.2	23.6	13.0	28.9	23
S.N.N.P	73.4	74.7	60.9	38.1	18.8	85.6	74.7	46.9	57.8	24.1	11.8	23.4	391
Gambela	72.0	72.4	48.3	27.6	35.7	87.4	73.4	41.5	51.7	15.5	7.7	23.7	8
Harari	72.9	76.4	66.7	51.8	30.4	92.0	81.6	59.6	64.7	34.1	8.0	37.1	5
Addis Ababa	97.5	94.5	92.1	89.2	87.3	97.5	92.8	81.7	93.5	78.7	2.5	79.9	43
Dire Dawa	87.5	90.2	86.4	75.3	43.8	96.3	89.9	79.3	79.9	58.6	3.0	52.1	7
Education													
No education	60.1	56.8	45.6	31.2	14.4	78.9	64.7	40.2	49.9	20.1	18.6	24.4	1,307
Primary	75.4	75.0	62.1	42.6	23.7	87.4	77.7	49.1	63.8	28.3	9.0	34.5	522
Secondary	99.8	99.2	95.1	79.2	68.6	99.7	99.7	73.7	82.1	57.0	0.0	50.3	59
More than secondary	(99.4)	(81.5)	(81.5)	(63.9)	(66.2)	(99.5)	(99.4)	(73.0)	(99.5)	(57.7)	(0.5)	(58.0)	43
Total	66.3	63.5	52.4	36.5	19.7	82.3	70.0	44.3	55.7	24.3	15.0	28.7	1,930

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] DPT-HepB-Hib was introduced in 2007, percentages in this column include receiving DPT or DPT-HepB-Hib
[2] Polio 0 is the polio vaccination given at birth
[3] BCG, measles and three doses each of DPT and polio vaccine excluding polio vaccine given at birth

Childhood Acute Respiratory Infection, Fever, and Diarrhoea

Acute respiratory infection (ARI), fever, and dehydration from diarrhoea are important contributing causes of childhood morbidity and mortality in developing countries (WHO, 2003). Prompt medical attention when a child has the symptoms of these illnesses is, therefore, crucial in reducing child deaths. In the 2011 EDHS, for each child under age 5, mothers were asked if the child had experienced an episode of diarrhoea, a cough accompanied by short, rapid breathing (symptoms of ARI), or fever in the two weeks preceding the survey. Respondents were also asked if treatment was sought when the child was ill. Overall, 7 percent of children under age 5 showed symptoms of ARI, 17 percent exhibited fever, and 13 percent experienced diarrhoea in the two weeks preceding the survey (data not shown). It should be noted that the morbidity data collected are subjective because they are based on a mother's perception of illnesses without validation by medical personnel.

Table 10 shows that treatment from a health facility or provider was sought for 27 percent of the children with ARI symptoms and 24 percent of the children with fever symptoms. Treatment was sought from a health facility or health provider for 31 percent of children with diarrhoea, and 31 percent of children with diarrhoea received a rehydration solution from an ORS packet or a recommended home fluid. Children of urban mothers were more likely than children of rural mothers to receive treatment from a health facility or health provider when they were sick with symptoms of ARI, fever, or diarrhoea.

Table 10. Treatment for acute respiratory infection, fever, and diarrhoea

Among children under five years who had symptoms of acute respiratory infection (ARI) or were sick with fever in the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, and among children under five years who were sick with diarrhoea during the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, percentage given a solution made from oral rehydration salt (ORS) packets or given prepackaged ORS liquids, and percentage given any oral rehydration therapy (ORT) by background characteristics, Ethiopia 2011

	Children with symptoms of ARI[1]		Children with fever		Children with diarrhoea			
Background characteristic	Percentage for whom treatment was sought from a health facility/ provider[2]	Number with ARI	Percentage for whom treatment was sought from a health facility/ provider[2]	Number with fever	Percentage for whom treatment was sought from a health facility/ provider[2]	Percentage given solution from ORS packet[3]	Percentage given any ORT[4]	Number with diarrhoea
Age in months								
<6	25.9	90	22.8	222	22.3	12.4	15.3	132
6-11	32.2	101	23.1	278	29.1	26.9	30.1	278
12-23	36.1	171	27.6	421	32.0	24.5	28.0	436
24-35	26.8	139	26.7	373	37.5	33.0	37.9	289
36-47	20.3	173	21.5	348	32.9	29.2	38.2	212
48-59	19.1	100	21.1	243	27.6	25.8	28.4	136
Sex								
Male	25.4	393	25.3	1,038	31.1	28.3	32.8	814
Female	28.7	380	23.0	847	31.8	23.8	28.1	670
Residence								
Urban	46.9	69	37.8	226	53.5	44.6	51.4	158
Rural	25.0	703	22.4	1,659	28.8	24.1	28.2	1,326
Region								
Tigray	18.4	66	20.5	168	34.1	29.2	37.3	94
Affar	40.6	6	28.5	26	39.9	32.8	38.6	14
Amhara	29.4	159	18.2	412	25.4	27.6	33.1	339
Oromiya	23.4	328	26.6	695	34.3	23.8	26.8	529
Somali	18.7	30	18.5	71	19.7	30.6	33.9	66
Benishangul-Gumuz	42.9	13	40.0	30	49.0	28.7	38.6	29
S.N.N.P	31.6	157	23.6	438	31.0	25.1	28.9	378
Gambela	52.5	3	46.5	10	47.1	45.3	48.7	8
Harari	*	0	46.0	3	45.0	38.6	44.2	3
Addis Ababa	*	7	(67.3)	26	(47.2)	(43.4)	(56.5)	20
Dire Dawa	(47.1)	2	50.7	5	(46.4)	(42.8)	(45.6)	3
Mother's education								
No education	24.6	551	21.9	1,272	28.9	23.5	27.4	1,060
Primary	27.7	200	27.1	543	33.2	29.7	35.0	380
Secondary	*	18	45.1	42	(61.2)	(44.6)	(57.5)	26
More than secondary	*	4	(43.6)	27	*	*	*	18
Total	27.0	773	24.2	1,885	31.4	26.3	30.7	1,483

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] Symptoms of ARI (cough accompanied by short, rapid breathing which was chest-related and/or by difficult breathing which was chest-related) is considered a proxy for pneumonia
[2] Excludes pharmacy, shop, and traditional practitioner
[3] Includes ORS from packets and prepackaged ORS liquids
[4] Includes ORS from packets, prepackaged ORS liquids, and recommended home fluid

Infant and Young Child Feeding Practices

Breastfeeding is sufficient and beneficial for infant nutrition in the first 6 months of life. Breastfeeding immediately after birth also helps the uterus retract, hence reducing the mother's postpartum blood loss. Supplementing breast milk before the child is 6 months of age is discouraged because it may inhibit breastfeeding and expose the newborn infant to illness. At a later stage of the baby's development, breast milk should be supplemented by other liquids and eventually by solid or mushy food to provide adequate nourishment (PAHO, 2002).

The 2011 EDHS collected data on infant and young child feeding (IYCF) practices for all children born in the two years preceding the survey. As shown in Table 11, 52 percent of children under 6 months (aged 0-5 months) are exclusively breastfed. In addition to breast milk, 19 percent of infants under 6 months are given plain water only, while 14 percent are given milk other than breast milk and 4 percent are given non-milk liquids and juice. Furthermore, 10 percent of infants under 6 months are given complementary foods. By age 6-9 months, 51 percent of infants are given complementary foods. Sixteen percent of infants under 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

Table 11. Breastfeeding status by age

Percent distribution of youngest children under two years who are living with their mother, by breastfeeding status and the percentage currently breastfeeding; and the percentage of all children under two years using a bottle with a nipple, according to age in months, Ethiopia 2011

	Percent distribution of youngest children under two living with their mother by breastfeeding status										
Age in months	Not breast-feeding	Exclusively breastfed	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids/ juice	Breast-feeding and consuming other milk	Breast-feeding and comple-mentary foods	Total	Percentage currently breast-feeding	Number of youngest children under two years	Percentage using a bottle with a nipple	Number of all children under two years
<2	1.0	70.3	18.0	2.3	5.7	2.7	100.0	99.0	363	8.8	373
2-3	0.7	55.3	16.8	3.6	15.3	8.3	100.0	99.3	479	14.3	481
4-5	2.9	31.8	21.2	6.1	19.2	18.9	100.0	97.1	406	23.1	411
6-8	1.7	16.9	16.7	3.5	12.9	48.4	100.0	98.3	608	13.9	610
9-11	4.1	3.6	9.2	4.9	6.9	71.4	100.0	95.9	505	11.5	510
12-17	5.2	1.6	7.0	2.2	3.8	80.1	100.0	94.8	1,000	10.2	1,030
18-23	15.9	1.2	1.3	0.5	0.7	80.3	100.0	84.1	835	7.8	900
<4	0.8	61.8	17.3	3.1	11.2	5.9	100.0	99.2	842	11.9	854
<6	1.5	52.0	18.6	4.0	13.8	10.1	100.0	98.5	1,248	15.5	1,265
6-9	2.7	14.2	14.6	4.2	12.8	51.4	100.0	97.3	778	14.3	780
12-15	3.6	1.9	7.7	2.6	4.6	79.7	100.0	96.4	682	11.8	693
12-23	10.1	1.4	4.4	1.5	2.4	80.2	100.0	89.9	1,836	9.1	1,930
20-23	17.8	0.8	1.4	0.5	0.5	79.1	100.0	82.2	521	7.3	564

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 breastfed, breastfeeding and consuming plain water, non-milk liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. 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.

Nutritional Status of Children

Anthropometric indicators were collected in the 2011 EDHS for young children to provide measures of nutritional status. As recommended by the WHO, evaluation of nutritional status in this report is based on a comparison of height and weight for the children in this survey with data for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group, 2006). Importantly, however, the WHO Child Growth Standards reference population used for the 2011 EDHS differs from that used in past DHS surveys, and thus the measures from the 2011 EDHS are not directly comparable to previous EDHS results.

The three indices are expressed as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the median of the reference population are considered severely malnourished.

Table 12 shows nutritional status for children under age 5 years, according to the three anthropometric indices, by background characteristics. Height-for-age is the measure of linear growth. A child who is below minus two standard deviations from the reference mean for height-for-age is considered short for his/her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. The percentage of children who are stunted (below -2 SD) is 44 percent; of which 21 percent are severely stunted. In the 2011 EDHS, results show small differences by sex. In rural areas, 46 percent of children are stunted, versus 32 percent of children in urban areas. Thirty percent or more of children are stunted in all regions except Addis Ababa (22 percent) and Gambela (27 percent). Stunting steadily decreases as level of mother's education increases, from a high of 47 percent among children of mothers with no education to a low of 19 percent among children of mothers with more than secondary education.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference mean for weight-for-height is considered too thin for his/her height, or wasted, a condition reflecting acute or recent nutritional deficit. Overall, 10 percent of children are wasted. Differences are observed by sex and urban-rural residence, with 11 percent of male children being wasted compared with 8 percent of female children and 10 percent of children in rural areas compared with 6 percent of children in urban areas. A higher percentage of children were found to be wasted in the Somali region (22 percent) than any other region. Wasting is highest among children of mothers with no education (11 percent) and lowest among children of mothers with a secondary education (3 percent).

Weight-for-age is a composite index of weight-for-height and height-for-age, and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be underweight for his/her age because he or she is stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. Overall, 29 percent of all children are underweight, and 9 percent of children are severely underweight. A higher percentage of males are underweight compared with females (31 and 27 percent, respectively). Thirty percent of rural children are underweight compared with 16 percent of urban children. Affar (40 percent) has the greatest percentage of children who are underweight. The percentage of children who are underweight is eight times higher for those born to uneducated mothers as for those whose mothers have more than secondary education (32 percent versus 4 percent).

Table 12. Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Ethiopia 2011

	Height-for-age[1]			Weight-for-height				Weight-for-age				
Background characteristic	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children
Age in months												
<6	2.7	10.0	-0.1	5.4	13.5	4.5	-0.4	3.5	10.0	3.5	-0.4	1,078
6-8	4.5	12.2	-0.4	3.4	13.8	2.4	-0.7	4.0	13.2	0.2	-0.8	580
9-11	13.9	31.6	-1.3	6.3	18.9	1.8	-0.9	9.9	29.1	0.3	-1.4	499
12-17	16.4	40.2	-1.5	5.2	16.1	1.3	-0.7	9.5	28.5	1.3	-1.3	1,002
18-23	26.0	49.9	-2.0	3.6	11.0	2.3	-0.6	9.5	31.1	1.2	-1.4	910
24-35	30.2	57.1	-2.2	2.4	8.4	1.8	-0.4	12.4	33.9	0.5	-1.5	2,043
36-47	23.7	54.6	-2.1	1.0	5.9	0.5	-0.4	8.7	32.5	0.1	-1.5	2,450
48-59	22.3	49.1	-2.0	1.5	6.6	1.1	-0.5	8.7	31.7	0.0	-1.5	2,321
Sex												
Male	21.7	46.2	-1.7	3.6	11.1	1.5	-0.6	8.9	30.5	0.6	-1.4	5,584
Female	19.4	42.5	-1.6	1.9	8.2	1.9	-0.5	8.8	26.8	0.8	-1.3	5,299
Residence												
Urban	12.4	31.5	-1.3	2.1	5.7	3.3	-0.2	4.8	16.3	1.6	-0.9	1,342
Rural	21.7	46.2	-1.8	2.9	10.2	1.5	-0.6	9.4	30.4	0.6	-1.4	9,541
Region												
Tigray	22.4	51.4	-2.0	3.0	10.3	1.0	-0.6	9.8	35.1	0.2	-1.6	733
Affar	29.1	50.2	-1.8	6.2	19.5	2.1	-0.9	17.2	40.2	0.6	-1.7	105
Amhara	24.2	52.0	-2.0	3.1	9.9	1.6	-0.6	9.7	33.4	0.2	-1.6	2,325
Oromiya	18.1	41.4	-1.5	2.8	9.7	1.4	-0.5	7.8	26.0	0.9	-1.2	4,723
Somali	16.1	33.0	-1.1	8.5	22.2	1.2	-1.1	11.8	33.5	0.9	-1.4	278
Benishangul-Gumuz	27.0	48.6	-1.9	2.5	9.9	1.2	-0.6	12.5	31.9	0.2	-1.5	123
S.N.N.P	22.9	44.1	-1.7	1.9	7.6	2.3	-0.3	9.6	28.3	0.8	-1.2	2,311
Gambela	10.7	27.3	-1.0	3.2	12.5	0.7	-0.7	7.4	20.7	0.7	-1.1	33
Harari	12.6	29.8	-1.1	1.6	9.1	1.8	-0.5	4.4	21.5	0.6	-1.0	23
Addis Ababa	5.9	22.0	-0.8	1.4	4.6	5.7	-0.0	1.7	6.4	2.5	-0.5	194
Dire Dawa	18.3	36.3	-1.4	2.0	12.3	2.0	-0.7	10.4	27.6	0.6	-1.3	35
Mother's education[3]												
No education	22.5	46.7	-1.8	2.9	10.9	1.5	-0.6	10.1	31.5	0.6	-1.4	7,212
Primary	17.0	41.7	-1.5	2.8	7.8	1.8	-0.4	6.9	25.2	0.9	-1.2	2,797
Secondary	6.9	20.0	-0.9	0.4	3.0	4.2	0.0	2.0	11.7	2.9	-0.5	229
More than secondary	4.1	18.9	-0.7	2.4	4.9	7.4	0.1	0.6	4.2	2.6	-0.3	147
Mother's interview status												
Mother interviewed	20.4	44.4	-1.7	2.8	9.9	1.8	-0.5	8.8	28.9	0.7	-1.3	10,161
Mother not interviewed, but in household	21.6	41.1	-1.6	3.5	8.7	0.5	-0.4	13.8	32.2	0.8	-1.3	224
Mother not interviewed, not in household[4]	23.7	46.0	-1.9	2.3	5.9	0.7	-0.3	7.2	23.3	0.0	-1.3	491
Total	20.6	44.4	-1.7	2.8	9.7	1.7	-0.5	8.8	28.7	0.7	-1.3	10,883

Note: Table is based on children who spent the night before the interview in the household. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used 1977 NCHS/CDC/WHO Reference. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight. Figures in parentheses are based on 25-49 unweighted cases. Total includes 7 children missing information on mother's interview status.

[1] Recumbent length is measured for children under age 2 and less than 85 cm; 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] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

[4] Includes children whose mothers are deceased

J. Anaemia Prevalence

The 2011 EDHS measured haemoglobin levels to identify anaemia in men, women and children.

Anaemia Prevalence in Children

Anaemia is a serious concern for young children because it can result in impaired cognitive performance, behavioural and motor development, coordination, language development, and scholastic

achievement, as well as increased morbidity from infectious diseases. Information on anaemia prevalence can be useful for developing health intervention programmes designed to prevent anaemia, such as iron fortification programmes.

Table 13 shows that 44 percent of children age 6-59 months are anaemic; 21 percent have mild anaemia, 20 percent have moderate anaemia, and 3 percent have severe anaemia. Children in rural areas (45 percent) have a higher anaemia prevalence compared with children in urban areas (35 percent). Among the regions, anaemia prevalence ranges from a high of 75 percent in Affar to a low of 33 percent in Addis Ababa.

Table 13. Anaemia among children and women

Percentage of children age 6-59 months and women age 15-49 years classified as having anaemia, by background characteristics, Ethiopia 2011

Background characteristic	Any anaemia	Percentage with anaemia: Mild anaemia	Moderate anaemia	Severe anaemia	Number
CHILDREN					
Residence					
Urban	35.2	15.7	18.0	1.5	1,139
Rural	45.4	22.1	20.7	2.6	8,661
Region					
Tigray	37.5	17.4	17.5	2.6	661
Affar	74.7	21.6	46.1	7.0	95
Amhara	35.1	19.4	14.5	1.1	2,148
Oromiya	51.7	22.9	25.1	3.7	4,199
Somali	68.7	24.5	35.2	9.0	241
Benishangul-Gumuz	46.5	25.1	19.6	1.8	111
S.N.N.P	36.9	21.3	15.1	0.5	2,111
Gambela	50.9	22.4	26.0	2.5	29
Harari	55.5	26.6	26.6	2.3	19
Addis Ababa	33.2	17.0	15.3	1.0	155
Dire Dawa	62.9	18.0	34.7	10.2	30
Total	44.2	21.4	20.4	2.5	9,800
WOMEN					
Residence					
Urban	10.9	8.8	1.9	0.2	3,621
Rural	18.3	14.4	3.3	0.7	12,161
Region					
Tigray	12.4	9.7	2.3	0.4	1,077
Affar	34.8	24.0	9.3	1.5	141
Amhara	16.6	13.8	2.4	0.4	4,219
Oromiya	19.2	15.2	3.3	0.7	5,834
Somali	44.0	24.8	14.7	4.5	292
Benishangul-Gumuz	19.1	14.3	4.2	0.6	167
S.N.N.P	11.3	8.8	2.1	0.4	3,090
Gambela	19.4	15.7	3.5	0.2	67
Harari	19.4	14.4	4.2	0.8	43
Addis Ababa	9.3	7.8	1.2	0.3	788
Dire Dawa	28.8	17.4	9.9	1.5	63
Total	16.6	13.1	2.9	0.6	15,782

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence of anaemia, based on haemoglobin levels, is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC, 1998). Women and children with <7.0 g/dl of haemoglobin have severe anaemia, women and children with 7.0-9.9 g/dl have moderate anaemia, and non-pregnant women with 10.0-11.9 g/dl and children and pregnant women with 10.0-10.9 g/dl have mild anaemia.

Anaemia Prevalence in Women

A woman's nutritional status has important implications for the health status of herself and her children. A woman who has poor nutritional status has a greater risk of adverse pregnancy outcomes as well as underweight babies. Table 13 shows that 17 percent of women age 15-49 are anaemic; 13 percent have mild anaemia, 3 percent have moderate anaemia, and 1 percent has severe anaemia. Although there is moderate variation by urban-rural residence, differences vary greatly by region, ranging from a high of 44 percent having anaemia in Somali to a low of 9 percent in Addis Ababa.

Anaemia levels have decreased by almost 10 percentage points among both women and children in the last five years. In the 2005 EDHS, 54 percent of children and 27 percent of women had anaemia, compared to 44 percent of children and 17 percent of women in 2011. This decrease is mostly seen among those with moderate anaemia which has decreased from 28 percent to 20 percent among children, and from 8 percent to 3 percent among women.

Anaemia Prevalence in Men

Eleven percent of men age 15-49 are anaemic. Men living in rural areas are more than twice as likely to be anaemic than their counterparts in urban areas (5 percent versus 13 percent). Regional variation is great; 15 percent of men living in Dire Dawa, Affar and Somali are anaemic compared with 3 percent of men living in Addis Ababa.

Table 14. Prevalence of anaemia in men

Percentage of men age 15-49 with anaemia by background characteristics, Ethiopia 2011

Background characteristic	Any anaemia <13.0 g/dl	Number of men
Residence		
Urban	4.8	2,555
Rural	13.1	9,527
Region		
Tigray	12.1	737
Affar	15.0	97
Amhara	13.6	3,266
Oromiya	11.8	4,742
Somali	14.9	208
Benishangul-Gumuz	14.1	130
S.N.N.P	8.1	2,161
Gambela	10.5	56
Harari	8.5	34
Addis Ababa	2.8	603
Dire Dawa	15.1	47
Total 15-49	11.3	12,082
Men 50-59	19.3	1,209
Total 15-59	12.0	13,291

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

K. HIV/AIDS Awareness, Knowledge, and Behaviour

The 2011 EDHS included a series of questions that addressed respondents' knowledge about HIV and AIDS, their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 15 shows that HIV/AIDS awareness is universal in Ethiopia where 97 percent of women and 99 percent of men have heard of AIDS. Awareness does not vary much by background characteristics except by education, those with no education being less likely to have heard of HIV/AIDS. Women in the Somali region are also less likely to have heard of AIDS (82 percent).

Table 15. Knowledge of AIDS

Percentage of women and men who have heard of AIDS, by background characteristics, Ethiopia 2011

Background characteristic	Women		Men	
	Have heard of AIDS	Number of women	Have heard of AIDS	Number of men
Age				
15-24	96.4	6,940	98.0	5,332
15-19	96.2	4,009	97.3	3,013
20-24	96.7	2,931	98.9	2,319
25-29	96.2	3,147	99.2	2,297
30-39	97.0	3,971	99.3	3,132
40-49	96.1	2,457	99.4	2,074
Marital status				
Never married	97.4	4,469	98.2	5,600
Ever had sex	98.3	353	99.9	1,044
Never had sex	97.3	4,116	97.8	4,555
Married or living together	96.1	10,287	99.2	6,872
Divorced/separated/widowed	96.4	1,758	99.9	363
Residence				
Urban	99.2	3,947	99.8	2,882
Rural	95.6	12,568	98.5	9,952
Region				
Tigray	99.7	1,104	99.8	770
Affar	96.5	145	98.7	101
Amhara	96.4	4,433	98.2	3,481
Oromiya	95.1	6,011	98.6	4,957
Somali	81.6	329	93.0	245
Benishangul-Gumuz	92.6	174	97.4	138
S.N.N.P	98.8	3,236	99.8	2,307
Gambela	97.7	69	99.4	59
Harari	99.6	49	99.8	40
Addis Ababa	99.9	896	100.0	682
Dire Dawa	99.3	69	99.7	53
Education				
No education	94.5	8,394	97.2	3,785
Primary	98.1	6,276	99.3	6,813
Secondary	99.8	1,117	100.0	1,296
More than secondary	100.0	728	100.0	940
Total 15-49	96.5	16,515	98.8	12,834
Men 50-59	na	na	98.8	1,276
Total 15-59	na	na	98.8	14,110

na = Not applicable

Table 16 shows that 56 percent of women and 82 percent of men age 15-49 years know that consistent use of condoms is a means of preventing the spread of HIV. Sixty-five percent of women and 74 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. The proportion knowing both that using condoms and limiting sexual intercourse to one uninfected partner is 43 percent among women and 64 percent among men.

Women and men who are married or living together are least likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduce the risk of HIV transmission (39 percent and 63 percent, respectively). Women and men who have never been married but who have ever had sex are most likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission (65 percent and 78 percent, respectively).

Table 16. 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 the AIDS virus by using condoms every time they have sexual intercourse and by having one partner who is not infected and has no other partners, by background characteristics, Ethiopia 2011

Background characteristic	Percentage of women who say HIV can be prevented by:				Percentage of men 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[1,2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of men
Age								
15-24	61.6	67.8	48.5	6,940	80.7	73.9	64.7	5,332
15-19	61.6	68.4	48.7	4,009	77.8	72.4	62.0	3,013
20-24	61.5	66.9	48.3	2,931	84.6	76.0	68.2	2,319
25-29	55.8	64.2	42.9	3,147	83.3	77.4	67.7	2,297
30-39	52.3	63.2	39.6	3,971	82.2	72.7	63.1	3,132
40-49	46.0	58.5	34.4	2,457	80.2	71.7	61.0	2,074
Marital status								
Never married	67.2	71.1	53.6	4,469	82.1	75.0	66.3	5,600
Ever had sex	81.3	74.6	64.7	353	92.9	82.5	77.9	1,044
Never had sex	66.0	70.8	52.7	4,116	79.6	73.3	63.6	4,555
Married or living together	51.0	62.0	38.8	10,287	81.0	72.9	62.6	6,872
Divorced/separated/widowed	56.0	63.5	42.9	1,758	81.1	74.9	64.0	363
Residence								
Urban	76.6	73.0	60.6	3,947	90.0	75.4	69.5	2,882
Rural	49.4	62.0	37.8	12,568	79.0	73.5	62.7	9,952
Region								
Tigray	73.9	81.6	63.9	1,104	89.9	84.7	78.5	770
Affar	36.1	32.3	23.3	145	73.6	62.9	51.1	101
Amhara	54.3	58.9	39.4	4,433	79.0	66.4	56.1	3,481
Oromiya	52.1	64.6	41.2	6,011	82.0	79.5	69.4	4,957
Somali	20.8	36.3	15.5	329	51.2	59.9	36.6	245
Benishangul-Gumuz	53.5	53.2	38.2	174	77.9	71.9	60.3	138
S.N.N.P	56.1	71.8	45.4	3,236	81.2	72.9	63.5	2,307
Gambela	55.1	46.3	34.3	69	85.8	72.4	67.0	59
Harari	58.5	53.1	38.2	49	75.0	49.3	40.2	40
Addis Ababa	82.4	65.4	57.0	896	94.1	70.7	68.4	682
Dire Dawa	64.6	69.5	50.1	69	86.9	82.4	72.0	53
Education								
No education	42.2	56.0	30.8	8,394	71.7	66.0	52.4	3,785
Primary	65.5	72.1	52.4	6,276	83.4	75.5	66.6	6,813
Secondary	82.4	78.1	65.2	1,117	90.8	82.3	76.3	1,296
More than secondary	90.9	78.9	73.4	728	94.4	82.3	78.7	940
Total 15-49	55.9	64.6	43.2	16,515	81.5	73.9	64.2	12,834
Men 50-59	na	na	na	na	76.1	71.3	58.1	1,276
Total 15-59	na	na	na	na	81.0	73.7	63.7	14,110

na = Not applicable
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners

Overall, women residing in urban areas are more likely to be knowledgeable about HIV prevention methods than their counterparts residing in rural areas. The same pattern is true for men. Knowledge generally varies across regions, with the lowest in Somali. Higher educational attainment is positively associated with increased awareness of HIV prevention methods for both women and men.

Knowledge of HIV prevention methods has increased since 2005, especially among women. According to the 2005 EDHS, 35 percent of women knew that HIV could be prevented by using a condom and by limiting sexual partners; this compares with 43 percent in 2011. Among men age 15-49, this percentage increased from 57 percent in 2005 to 64 percent in 2011.

To obtain information on risk factors, respondents were also asked detailed questions about their sexual behaviour, including the number of partners they had in the 12 months preceding the survey. Women and men were also asked about condom use in the 12 months preceding the survey. The results are shown in Table 17.1 for women and Table 17.2 for men.

Overall, less than 1 percent of women reported that they had two or more partners in the past 12 months. Among women who had two or more partners in the past 12 months, 47 percent reported using a condom at the last sexual intercourse. Among all female respondents who have ever had sexual intercourse, the mean number of partners in their lifetime is 1.5.

Overall, 4 percent of men age 15-49 reported that they had two or more partners in the past 12 months. Among men who had two or more partners in the past 12 months, 16 percent reported using a condom at the last sexual intercourse. Among all male respondents age 15-49 who have ever had sexual intercourse, the mean number of partners in their lifetime is 2.6.

Men age 40-49 are eight times as likely as their younger counterparts ages 15-24 to have had two or more partners in the past 12 months (8 and 1 percent, respectively). Formerly married men are more likely to have had two or more partners in the past 12 months (9 percent) than their never-married (1 percent) and married or living together counterparts (5 percent). Almost three-quarters of never-married men (72 percent) who have had two or more partners in the past 12 months reported using a condom during the last sexual intercourse, compared with only 2 percent of currently married men.

Equal proportions of urban men and rural men have had two or more partners in the past 12 months (3 percent each). Fifty-four percent of urban men and 6 percent of rural men who had two or more partners in the past 12 months reported using a condom at their last sexual intercourse.

As education levels increase, men are less likely to have had two or more partners in the past 12 months (3 percent of those with more than secondary education compared to 4 percent of those with no education). Among men who had two or more partners in the past 12 months, condom use during last sexual intercourse increases with education level; 54 percent of men with some secondary education used a condom compared with 14 percent of men with at least some primary education.

Table 17.1 Multiple sexual partners in the past 12 months: Women

Among all women age 15-49, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months; among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse; and the mean number of sexual partners during her lifetime for women who ever had sexual intercourse, by background characteristics, Ethiopia 2011

	All women		Among women who had 2+ partners in the past 12 months:		Among women who ever had sexual intercourse:[1]	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Number of women	Percentage who reported using a condom during last sexual intercourse	Number of women	Mean number of sexual partners in lifetime	Number of women
Age						
15-24	0.5	6,940	(61.6)	28	1.5	3,090
15-19	0.3	4,009	*	11	1.4	968
20-24	0.8	2,931	*	17	1.6	2,122
25-29	0.6	3,147	*	19	1.5	2,911
30-39	0.4	3,971	*	10	1.5	3,873
40-49	0.3	2,457	*	5	1.7	2,438
Marital status						
Never married	0.3	4,469	*	13	3.5	351
Married/living together	0.4	10,287	(4.1)	29	1.4	10,252
Divorced/separated/widowed	1.3	1,758	(85.5)	20	2.1	1,709
Residence						
Urban	0.8	3,947	(71.0)	29	1.9	2,558
Rural	0.4	12,568	(26.1)	33	1.4	9,753
Region						
Tigray	0.9	1,104	*	10	2.0	829
Affar	0.0	145	*	0	1.2	121
Amhara	0.5	4,433	*	12	1.7	3,442
Oromiya	0.3	6,011	*	15	1.3	4,522
Somali	1.1	329	*	2	1.2	263
Benishangul-Gumuz	0.6	174	*	1	1.4	142
S.N.N.P	0.5	3,236	*	14	1.5	2,301
Gambela	11.2	69	(95.8)	8	8.1	61
Harari	0.2	49	*	0	1.3	36
Addis Ababa	0.2	896	*	1	1.6	545
Dire Dawa	0.1	69	*	0	1.5	49
Education						
No education	0.5	8,394	(30.9)	32	1.5	7,855
Primary	0.6	6,276	(63.8)	29	1.7	3,474
Secondary	0.0	1,117	*	0	1.3	528
More than secondary	0.1	728	*	0	1.3	454
Total	0.5	16,515	47.1	62	1.5	12,311

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 17.2 Multiple sexual partners in the past 12 months: Men

Among all men age 15-49, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months; among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse; and the mean number of sexual partners during his lifetime for men who ever had sexual intercourse, by background characteristics, Ethiopia 2011

	All men		Among men who had 2+ partners in the past 12 months:		Among men who ever had sexual intercourse:[1]	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Number of men	Percentage who reported using a condom during last sexual intercourse	Number of men	Mean number of sexual partners in lifetime	Number of men
Age						
15-24	1.0	5,332	47.2	52	1.9	1,260
15-19	0.5	3,013	*	14	1.9	234
20-24	1.7	2,319	36.9	37	1.9	1,026
25-29	2.9	2,297	47.1	60	2.1	1,854
30-39	5.4	3,132	7.0	168	2.5	3,028
40-49	8.4	2,074	2.8	166	3.8	2,047
Marital status						
Never married	1.2	5,600	72.1	65	3.0	1,033
Married/living together	5.4	6,872	1.6	350	2.4	6,810
Divorced/separated/widowed	9.1	363	(54.2)	31	5.3	345
Residence						
Urban	3.4	2,882	53.9	93	4.3	1,839
Rural	3.7	9,952	5.5	353	2.1	6,350
Region						
Tigray	1.8	770	*	13	3.5	478
Affar	8.0	101	20.2	8	3.7	73
Amhara	1.8	3,481	(24.3)	54	2.6	2,121
Oromiya	4.1	4,957	10.8	201	2.2	3,194
Somali	6.9	245	(5.6)	15	1.9	164
Benishangul-Gumuz	8.4	138	3.7	12	2.4	93
S.N.N.P	5.2	2,307	5.4	115	2.6	1,481
Gambela	8.5	59	30.3	5	5.9	45
Harari	2.0	40	*	1	2.4	28
Addis Ababa	3.2	682	(71.8)	22	4.6	473
Dire Dawa	2.7	53	*	1	3.4	38
Education						
No education	4.4	3,785	1.4	153	2.1	3,107
Primary	3.6	6,813	13.9	236	2.6	3,766
Secondary	2.4	1,296	54.0	31	4.0	637
More than secondary	2.9	940	69.4	25	4.0	679
Total 15-49	3.6	12,834	15.5	446	2.6	8,189
Men 50-59	6.4	1,276	3.5	82	4.5	1,246
Total 15-59	3.9	14,110	13.7	528	2.9	9,435

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.

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