

Uganda - Demographic and Health Survey 2011

Uganda Bureau of Statistics (UBOS) - Government of Uganda

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Sampling

Sampling Procedure

Sample Frame

The sampling frame used for the 2011 UDHS is the 2002 Population Census provided by the Uganda Bureau of Statistics (UBOS). The UBOS has an electronic file consisting of 48,715 Enumeration Areas (EAs) created for the 2002 Population and Housing Census. An EA is a geographic area consisting of a convenient number of dwelling units that serve as counting units for the census.

Sample Design

The sample for the 2011 UDHS was designed to provide population and health indicator estimates for the country as a whole and for urban and rural areas separately. A representative sample of 10,086 households was selected for the 2011 UDHS. The sample was selected in two stages. In the first stage, 404 enumeration areas (EAs) were selected from among a list of clusters sampled for the 2009/10 Uganda National Household Survey (2010 UNHS). This matching of samples was done to allow linking of the 2011 UDHS health indicators to poverty data from the 2010 UNHS. The clusters in the UNHS were selected from the 2002 Population Census sample frame.

In the second stage of sampling, households in each cluster were selected from a complete listing of households, which was updated prior to the survey. Households were purposively selected from those listed. All households in the 2010 UNHS that were in the 404 EAs were included in the UDHS sample.

All women age 15-49 who were either permanent residents of the households or visitors who slept in the households the night before the survey were eligible to be interviewed. In addition, in a subsample of one-third of households selected for the survey, all men age 15-54 were eligible to be interviewed if they were either permanent residents or visitors who slept in the household on the night before the survey. An additional sample was selected for administration of the Maternal Mortality Module.

Note: See Appendix A (in final survey report) for the details of the sample design.

Response Rate

A total of 10,086 households were selected for the sample, of which 9,480 were found to be occupied during data collection. Of these, 9,033 households were successfully interviewed, giving a household response rate of 95 percent.

Of the 9,247 eligible women identified in the selected households, interviews were completed with 8,674 women, yielding a response rate of 94 percent for women.

Of the 2,573 eligible men identified in the selected subsample of households for men, 2,295 were successfully interviewed, yielding a response rate of 89 percent for men.

Response rates were higher in rural than in urban areas, with the rural-urban difference being more pronounced among men (92 and 82 percent, respectively) than among women (95 and 91 percent, respectively).

Note: See summarized response rates by residence (urban/rural) in Table 1.2 of the survey final report.

Weighting

Due to the non-proportional allocation of the sample to the different regions and to urban and rural areas, sampling weights are required for any analysis using 2011 UDHS data to ensure representativeness of the survey results at the national and regional levels. Because the 2011 UDHS sample is a two-stage stratified cluster sample, sampling weights were calculated separately based on sampling probabilities for each sampling stage and for each cluster.

See Appendix A.4 (in final survey report) for the details of sampling weight calculation.

Questionnaires

Overview

Four types of questionnaires were used in the 2011 UDHS: the Household Questionnaire, the Woman's Questionnaire, the Maternal Mortality Questionnaire, and the Man's Questionnaire. These questionnaires were adapted from model survey instruments developed by ICF for the MEASURE DHS project and by UNICEF for the Multiple Indicator Cluster Survey (MICS) project. The intent was to reflect the population and health issues relevant to Uganda. Questionnaires were discussed at a series of meetings with various stakeholders, ranging from government ministries and agencies to nongovernmental organizations (NGOs) and development partners. The questionnaires were translated into seven major languages: Ateso, Ngakarimojong, Luganda, Lugbara, Luo, Runyankole-Rukiga, and Runyoro-Rutoro.

The Household Questionnaire was used to list all the usual members and visitors who spent the previous night in the selected households. Basic information was collected on the characteristics of each person listed, including his or her age, sex, education, relationship to the head of the household, and disability status. For children under age 18, survival status of the parents was determined. Data on the age and sex of household members were used to identify women and men eligible for an individual interview. In addition, 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 bednets.

The Woman's Questionnaire was used to collect information from all eligible women age 15-49.

The eligible 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
- Woman'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 and other health issues
- Gender-based violence

The Maternal Mortality Questionnaire was administered to all eligible women age 15-49 in 35 additional households in 394 out of 404 EAs. It collected data on maternal mortality using the Sibling Survival Module (commonly referred to as the 'Maternal Mortality Module').

The Man's Questionnaire was administered to all eligible men age 15-54 years in every third household in the 2011 UDHS sample. The Man's Questionnaire collected information similar to that in the Woman's Questionnaire but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health.

Data Collection

Data Collection Dates

Start	End	Cycle
2011-06	2011-12	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

Listing

A household listing operation was conducted in the 404 selected clusters and 10 regions for about three months, starting in April 2011. For this purpose, 18 listing staff were recruited from the UBOS head office to carry out the household listing and prepare the sketch map for each selected EA. A manual of instructions that described the listing and mapping procedures was prepared as a guideline, and the training involved both classroom demonstrations and field practice. Instructions were given on the use of global positioning system (GPS) units to obtain location coordinates for the selected clusters. The listing was performed by organizing the listing staff into six teams, with two listers per team. Six supervisors were also assigned from the UBOS offices to perform quality checks and handle all administrative and technical aspects of the listing operation. Rounds of supervision were also carried out to assess the quality of the field operation and to ensure proper listing.

Pretest

Before the start of fieldwork, the questionnaires were pretested in all seven local languages to make sure that the questions were clear and could be understood by the respondents. Thirty field workers, comprising of women and men were hired to conduct the pretest. They were trained from August 30, 2010, to September 14, 2010, on how to administer the UDHS survey questionnaires. Seven days of fieldwork and one day of interviewer debriefing and examination followed. Pretest fieldwork was conducted in two clusters each (one urban and one rural) in seven districts. The majority of pretest participants attended the 2011 UDHS training and served as field editors and team leaders in the survey.

A second pretest was undertaken to test the management and implementation of the computer-assisted field data editing (CAFE) program and, more specifically, to develop data editing guidelines for the 2011 UDHS. The 2011 UDHS marked the first time tablet computers were used to collect data from the field. The data file transfer process was tested using the internet file streaming system (IFSS) developed by the DHS programme, through which data from the field could be transferred to the UBOS main office via the internet.

Main Training

UBOS recruited and trained 146 field workers to serve as team supervisors, field editors, male and female interviewers, and reserve interviewers for the main survey. The training, which was conducted from 2 May 2011 to 1 June 2011, consisted of instruction regarding interviewing techniques and field procedures, a detailed review of questionnaires, tests, and instruction and practice in weighing and measuring children. The training also included mock interviews and role plays among participants in the classroom and in the neighbouring villages. Team supervisors and editors were further trained in data quality control procedures and fieldwork coordination. The training mainly used the English questionnaires, while the translated versions were simultaneously checked against the English questionnaires to ensure accurate translation.

Fieldwork

Sixteen data collection teams were formed, each comprised of a team supervisor, a field editor, three female interviewers, one male interviewer, one health technician, and a driver. UBOS staff coordinated and supervised fieldwork activities. USAID/Uganda technical staff also participated in the fieldwork monitoring. A data validation team was formed for each of the 10 regions. Each data validation team included a field supervisor and three interviewers. An independent quality control team that was looking at survey protocol issues also visited the data collection teams. Data collection took place over a six-month period, from end of June 2011 to early December 2011. Fieldwork was carried out in six separate field trips. Between trips, all teams met in Kampala to discuss problems with fieldwork logistics or data collection and to receive feedback and training reinforcement from UBOS staff.

Data Collectors

Name	Abbreviation	Affiliation
Uganda Bureau of Statistics	UBOS	Government of Uganda

Data Processing

Data Editing

Questionnaire data were entered in the field by the field editors on each team and the files were periodically sent to the UBOS office by internet. All the paper questionnaires were also returned to UBOS headquarters in Kampala for data processing, which consisted of office editing, coding of open-ended questions, a second data entry, and finally, editing computer-identified errors. The data were processed by a team of eight data entry operators, two office editors, and one data entry supervisor. Data entry and editing were accomplished using CSPro software. The processing of data was initiated in August 2011 and completed in January 2012.

Data Appraisal

Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: non-sampling errors and sampling errors. Non-sampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2011 Uganda DHS (UDHS) to minimise this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2011 UDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

Sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2011 UDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. Sampling errors are computed in either ISSA or SAS, using programs developed by ICF International. These programs use the Taylor linearisation method of variance estimation for survey estimates that are means, proportions or ratios. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

See Appendix B (in final survey report) for the details of estimates of sampling errors.

Other forms of Data Appraisal

Data Quality Tables

- Household age distribution
- Age distribution of eligible and interviewed women
- Age distribution of eligible and interviewed men
- Completeness of reporting
- Births by calendar years
- Reporting of age at death in days
- Reporting of age at death in months
- Nutritional status of children
- Completeness of information on siblings
- Sibship size and sex ratio of siblings

Note: See Appendix C (in final survey report) for the details of data quality tables.

Related Materials

Questionnaires

2011 Demographic and Health Survey, Questionnaire

Title 2011 Demographic and Health Survey, Questionnaire
 Author(s) Uganda Bureau of Statistics (UBOS)
 Date 2011-05-01
 Country Uganda
 Language English
 Filename UGA_2011_DHS_Questionnaires_EN.pdf

Reports

Uganda Demographic and Health Survey 2011, Report

Title Uganda Demographic and Health Survey 2011, Report
 Author(s) Uganda Bureau of Statistics, Kampala, Uganda MEASURE DHS, ICF International, Calverton, Maryland, USA
 Date 2012-08-01
 Country Uganda
 Language English
 Description This report summarizes the findings of 2011 Uganda Demographic and Health Surveys (UDHS) conducted by Uganda Bureau of Statistics.
 Filename <http://www.dhsprogram.com/pubs/pdf/FR264/FR264.pdf>

Uganda Demographic and Health Survey 2011, Errata

Title Uganda Demographic and Health Survey 2011, Errata
 Author(s) Uganda Bureau of Statistics, Kampala, Uganda MEASURE DHS, ICF International, Calverton, Maryland, USA
 Date 2012-08-01
 Country Uganda
 Language English
 Description All corrections have been made to the electronic version of the report.
 Filename http://www.dhsprogram.com/pubs/pdf/FR264/UDHS_2011_errata_sheet_28Feb2013.pdf

Technical documents

DHS Survey Organization Manual

Title DHS Survey Organization Manual
 Author(s) MEASURE DHS
 Date 2012-02-01
 Language English
 Description This manual is intended as an aid to host country survey staff, donors, and others. It explains the standard approach to implementing Demographic and Health Surveys (DHS), giving general organization and implementation guidelines.

Filename http://www.dhsprogram.com/pubs/pdf/DHSM10/DHS6_Survey_Org_Manual_7Dec2012_DHSM10.pdf

Training Field Staff for DHS Surveys

Title Training Field Staff for DHS Surveys

Author(s) MEASURE DHS

Date 2009-09-01

Language English

Description This manual was produced as an aid for use in the design and implementation of field staff training. This document provides general guidelines for organizing and conducting the training of the field staff. The manual also includes a section on supervising fieldwork and the use of fieldcheck tables.

Filename http://www.dhsprogram.com/pubs/pdf/DHSM3/Training_Field_Staff_for_DHS_Surveys_Oct2009.pdf

DHS Interviewer's Manual

Title DHS Interviewer's Manual

Author(s) MEASURE DHS

Date 2012-09-01

Language English

Description This manual is designed to explain to interviewers how to do their job. The manual complements the 2005 versions of the DHS Model Survey Questionnaires and includes information about implementation of the survey, training activities, and fieldwork procedures. It discusses in detail interview techniques and procedures for completing the questionnaires.

Filename http://www.dhsprogram.com/pubs/pdf/DHSM1/DHS6_Interviewer_Manual_19Oct2012_DHSM1.pdf

DHS Supervisor's and Editor's Manual

Title DHS Supervisor's and Editor's Manual

Author(s) MEASURE DHS

Date 2011-03-01

Language English

Description This manual is designed to explain to field supervisors and field editors how to do their jobs. The instructions for both positions have been combined into one manual because supervisors and field editors are expected to share many activities, e.g., editing questionnaires and tracking interviewers' performance. The manual complements the 2005 versions of the DHS Model Survey Questionnaires.

Filename http://www.dhsprogram.com/pubs/pdf/DHSM2/DHS6_Supervisor_Editor_Manual_30Mar2011.pdf

DHS Biomarker Field Manual

Title DHS Biomarker Field Manual

Author(s) MEASURE DHS

Date 2011-07-01

Language English

Description This manual is meant to accompany hands-on biomarker training and field practice and covers collection of anthropometry data, capillary blood drop samples, anemia testing, dried blood spot (DBA) testing, HIV testing, and biohazard waste disposal.

Filename http://www.dhsprogram.com/pubs/pdf/DHSM7/DHS6_Biomarker_Manual_9Jan2012.pdf

Sampling and Household Listing Manual

Title Sampling and Household Listing Manual

Author(s) MEASURE DHS

Date 2012-09-01

Language English

Description	The DHS Sampling Manual presents the DHS approach to sampling issues such as optimum sampling frames, sample domains, stages, and sample selection.
Filename	http://www.dhsprogram.com/pubs/pdf/DHSM4/DHS6_Sampling_Manual_Sept2012_DHSM4.pdf

Preliminary Report Tabulation Plan for MEASURE DHS Phase 3

Title	Preliminary Report Tabulation Plan for MEASURE DHS Phase 3
Author(s)	MEASURE DHS
Date	2011-06-15
Language	English
Description	This plan provides the tables for presenting the preliminary results obtained from the DHS survey.
Filename	http://www.dhsprogram.com/pubs/pdf/DHSM5/DHS6_Preliminary_report_tables_15Jun2011.pdf

Tabulation Plan for DHS Final Report

Title	Tabulation Plan for DHS Final Report
Author(s)	MEASURE DHS
Date	2012-01-01
Language	English
Description	<p>The Guidelines for the Main Survey Report (also known as the Tabulation Plan) provides model tables that set forth the major findings of a survey in a manner that will be useful to policy makers and program managers. The data are presented in terms of national level statistics and for population subgroups such as those defined by age, education, marital status, economic status, urban/rural residence and region of the country. When appropriate to a topic, further data disaggregations are shown.</p> <p>The Guidelines complement the 2005 versions of the DHS Model Survey Questionnaires. Those survey instruments are substantially longer than previous model DHS Questionnaires, primarily because they incorporate topics formerly addressed in separate modules—topics such as malaria, HIV prevalence, information on orphans and vulnerable children, and support for chronically ill household members. Accordingly, this is an expanded version of previous DHS Guidelines and consists of nearly 250 tables contained in 16 substantive chapters.</p>
Filename	http://www.dhsprogram.com/pubs/pdf/DHSM6/Final_Report_Tab_Plan_22Jan2013_DHSM6.pdf

Guide to DHS Statistics

Title	Guide to DHS Statistics
Author(s)	MEASURE DHS
Date	2006-09-01
Language	English
Description	A reference guide to help users who work with DHS survey indicators and datasets to better understand indicator definitions and the calculations used to generate the data.
Filename	http://www.dhsprogram.com/pubs/pdf/DHSG1/Guide_to_DHS_Statistics_29Oct2012_DHSG1.pdf

International Indicators

Title	International Indicators
Author(s)	MEASURE DHS
Language	English
Description	A list of DHS Indicators that correspond to indicators from international agencies and organizations. Taken from Appendix D of the Tabulation Plan for DHS Final Report.
Filename	http://www.dhsprogram.com/pubs/pdf/DHSG2/DHS_Intl_Indicators_9Jan2012.pdf