Kenya - Demographic and Health Survey 2008-2009

Kenya National Bureau of Statistics (KNBS)

Report generated on: June 16, 2017

Sampling

Sampling Procedure

The survey is household-based, and therefore the sample was drawn from the population residing in households in the country. A representative sample of 10,000 households was drawn for the 2008-09 KDHS. This sample was constructed to allow for separate estimates for key indicators for each of the eight provinces in Kenya, as well as for urban and rural areas separately. Compared with the other provinces, fewer households and clusters were surveyed in North Eastern province because of its sparse population. A deliberate attempt was made to oversample urban areas to get enough cases for analysis. As a result of these differing sample proportions, the KDHS sample is not self-weighting at the national level; consequently, all tables except those concerning response rates are based on weighted data.

The KNBS maintains master sampling frames for household-based surveys. The current one is the fourth National Sample Survey and Evaluation Programme (NASSEP IV), which was developed on the platform of a two-stage sample design. The 2008-09 KDHS adopted the same design, and the first stage involved selecting data collection points ('clusters') from the national master sample frame. A total of 400 clusters-133 urban and 267 rural-were selected from the master frame. The second stage of selection involved the systematic sampling of households from an updated list of households. The Bureau developed the NASSEP frame in 2002 from a list of enumeration areas covered in the 1999 population and housing census. A number of clusters were updated for various surveys to provide a more accurate selection of households. Included were some of the 2008-09 KDHS clusters that were updated prior to selection of households for the data collection.

All women age 15-49 years who were either usual residents or visitors present in sampled households on the night before the survey were eligible to be interviewed in the survey. In addition, in every second household selected for the survey, all men age 15-54 years were also eligible to be interviewed. All women and men living in the households selected for the Men's Questionnaire and eligible for the individual interview were asked to voluntarily give a few drops of blood for HIV testing.

Note: See detailed description of the sample design in Appendix A of the survey final report.

Response Rate

A total of 9,936 households were selected in the sample, of which 9,268 were occupied at the time of fieldwork and thus eligible for interviews. Of the eligible households, 9,057 households were successfully interviewed, yielding a response rate of 98 percent. The shortfall in the number of households was largely due to structures that were found to be vacant or destroyed and households whose members were absent for an extended period during data collection.

From the households interviewed, 8,767 women were found to be eligible and 8,444 were interviewed, giving a response rate of 96 percent. Interviews with men covered 3,465 of the eligible 3,910 men, yielding a response rate of 89 percent. The response rates are generally higher in rural than in urban areas.

The main reason for no response among both eligible men and eligible women was the failure to find individuals at home despite repeated callbacks made to the household by the interviewers. On some occasions the interviewers would visit respondents at their work places without success. The lower response rates for men are a result of their more frequent absences from home.

Note: See summarized response rates in Table 1.2 of the survey final report.

Questionnaires

Overview

Three questionnaires were used to collect the survey data: the Household, Women's, and Men's Questionnaires. The contents of these questionnaires were based on model questionnaires developed by the MEASURE DHS programme that underwent only slight adjustments to reflect relevant issues in Kenya. Adjustment was done through a consultative process with all the relevant technical institutions, government agencies, and local and international organisations. The three questionnaires were then translated from English into Kiswahili and 10 other local languages (Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Maasai, Meru, Mijikenda, and Somali). The questionnaires were further refined after the pretest and training of the field staff.

In each of the sampled households, the Household Questionnaire was the first to be administered and was used to list all the usual members and visitors. Basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The main purpose of the Household Questionnaire was to identify women age 15-49 and men age 15-54 who were eligible for the individual interviews. The questionnaire also 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, walls, and roof of the house, ownership of various durable goods, ownership of agricultural land, ownership of domestic animals, and ownership and use of mosquito nets. In addition, this questionnaire was used to capture information on height and weight measurements of women age 15-49 years and children age five years and below, and, in households eligible for collection of blood samples, to record the respondents' consent to voluntarily give blood samples. A detailed description of HIV testing procedures is given in Section 1.10 below.

The Women's Questionnaire was used to capture information from all women age 15-49 years and covered the following topics:
- Respondent's background characteristics (e.g., education, residential history, media exposure)
- Reproductive history
- Knowledge and use of family planning methods
- Antenatal, delivery, and postnatal care
- Breastfeeding
- Immunisation, nutrition, and childhood illnesses
- Fertility preferences
- Husband's background characteristics and woman's work
- Marriage and sexual activity
- Infant and child feeding practices
- Childhood mortality
- Awareness and behaviour about HIV/AIDS and other sexually transmitted diseases
- Knowledge of tuberculosis
- Health insurance
- Adult and maternal mortality
- Domestic violence
- Female genital cutting

The set of questions on domestic violence sought to obtain information on women's experience of violence. The questions were administered to one woman per household. In households with more eligible women, special procedures (use of a 'Kish grid') were followed to ensure that the woman interviewed about domestic violence was randomly selected.

The Men's Questionnaire was administered to all men age 15-54 years living in every second household in the sample. The Men's Questionnaire collected information similar to that collected in the Women's Questionnaire, but it was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, maternal mortality, and domestic violence.

Two pilot projects were conducted in 12 districts for the KDHS, the first from July 1-7, 2008, and the second from October 13-17, 2008, to test the questionnaires, which were written in English and then translated into eleven other languages. The pilot was repeated because the first pilot did not include the HIV blood testing component. Twelve teams (one for each language) were formed, each with one female interviewer, one male interviewer, and one health worker. A total of 260 households were covered in the pilots. The lessons learnt from the pilot surveys were used to finalise the survey instruments and set up strong, logistical arrangements to ensure the success of the survey.

Data Collection

Data Collection Dates

Start	End	Cycle
2008-11	2009-02	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

TRAINING

KNBS recruited research assistants and supervisors in the month of October 2008 based on a set of qualifications and experience, especially in past KDHSs or other health-related sample surveys, such as the Kenya Aids Indicator (KAIS) Survey, the Kenya Malaria Indicator Survey (KMIS), and the Multiple Indicator Cluster Survey (MICS). The process brought on board a number of qualified people with the skills necessary to undertake the survey.

Different categories of personnel were recruited and trained to undertake the KDHS. These included 23 supervisors, 52 health workers, 92 female research assistants, 23 male research assistants, 23 field editors, 6 office editors, 4 quality assurance personnel, and 5 reserves.

A three-week training course was conducted from October 21 to November 8 in Nakuru. Because of the large number of people involved, trainees were divided into five groups and trained in three different locations on questionnaire administration. They came together in plenary sessions for special lectures. Four trainers were assigned to each group. The trainers were officers of KNBS, the Ministry of Public Health, and NCAPD, as well as staff from ICF Macro. The training team developed a programme that allowed for some topics to be shared in plenary sessions while others were conducted in the smaller classes to allow for better explanation of technical details. In addition to the main regular trainers, guest lecturers gave presentations in plenary sessions on specialised topics such as family planning, anthropometric measurements, HIV/AIDS, and Kenya’s VCT programme.

The DHS standard approach to training was used, including class presentations, mock interviews in class, and practice interviews in the field. Participants were also given tips on interviewing techniques. Three tests were given to help participants understand the survey concepts and how to complete each of the three questionnaires. Anthropometric measurement was given special attention by inviting an expert who conducted training and also provided many hours of demonstrations and practical exercises to each group.

A separate class was organised for the health workers. Staff from KEMRI and NACC trained the health workers on how to administer the consent procedures, how to take blood spots for HIV testing, and how to minimise risks in handling blood products (‘universal precautions’).

All trainees were taken for practice interviews in households in selected areas in the town of Nakuru. Towards the end of training, the final field teams were formed and supervisors, enumerators, editors, and quality assurance personnel were identified. This was based on performance both in class and in the field, as well as on the leadership skills displayed during training. Both supervisors and editors were taken through further training on how to supervise fieldwork and edit questionnaires in the field.

FIELDWORK

Fieldwork started on 13 November 2008 and was completed in late February 2009. Each of the 23 field teams was composed of one supervisor, one field editor, four female interviewers, one male interviewer, two health workers, two VCT counsellors, and one driver. There were a few teams that had two vehicles and two drivers. Staff from KNBS and ICF Macro participated in field supervision.

In related surveys, many respondents expressed interest in learning their HIV status, so to ensure that this need would be met, the National AIDS Control Programme (NASCOP) engaged a parallel team of two VCT counsellors to work with each of the data collection teams. The mobile VCT teams followed the same protocol applied in fixed VCT sites, according to the National Guidelines for Voluntary Counselling and Testing for HIV (Ministry of Health, 2003). This included pretest counselling of the clients followed by anonymous testing for HIV for those requesting the service. A finger prick was performed to collect drops of blood for simultaneous (parallel) testing performed with two simple, rapid HIV test kits (Abbott Determine HIV 1/2 and Trinity Biotech Uni-Gold); for quality control, a dried blood spot filter paper was collected on every tenth client for testing

in the laboratory. During the 15 minutes while the test was developing, prevention counselling was provided. If the two test results were discrepant, a third test (Instascreen) was performed as a 'tiebreaker'. Post-test counselling was then provided.

The sensitivity of the survey required a good plan for social mobilisation in areas where the survey was conducted. NACC organised and implemented a series of mobilisation activities in the clusters sampled for the KDHS before the survey teams moved in to conduct interviews. This process appeared to have had a positive impact on the survey, likely contributing to the high response rates.

NACC also printed a brochure on HIV/AIDS and VCT for the team's health workers to provide to all households and survey respondents. Similarly, numbered vouchers were printed and left with eligible respondents. The vouchers were to be given to the mobile VCT teams or the fixed VCT site when the eligible respondents went for VCT. NASCOP also made arrangements with the fixed VCT sites charging for services, so that they would provide free services to KDHS clients. Finally, although the VCT teams were to give priority to clients presenting the KDHS vouchers, they also accepted any other clients from the sampled communities.

Data Processing

Other Processing

A data processing team was constituted and trained at the KNBS offices in Nyayo House in Nairobi after the data collection teams started fieldwork. This team was supported by technical assistance from ICF Macro. Data processing commenced at the beginning of December 2008 and was finalised in early March 2009. Tabulation of the results was done by June 2009 by KNBS in collaboration with ICF Macro. Data processing for blood draws was delayed at the National HIV Reference Laboratory to allow for completion of data cleaning and validation and to remove all personal identifiers from the stored questionnaires. The KDHS preliminary report was prepared and launched in November 2009.

Data Appraisal

Estimates of Sampling Error

Estimates derived from a sample survey are affected by two types of errors: 1) non-sampling errors and 2) 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 2008-09 Kenya Demographic and Health Survey (2008-09 KDHS) to minimize 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 2008-09 KDHS 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 2008-09 KDHS sample is the result of a multi-stage stratified design, and consequently, it was necessary to use a more complex formula. The computer software used to calculate sampling errors for the 2008-09 KDHS is the sampling error module in ISSA (Integrated System for Survey Analysis). This module uses the Taylor linearization method of variance estimation for survey estimates that are means or proportions. Another approach, the Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

Note: See detailed estimate of sampling error calculation in APPENDIX B of the survey final report.

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

Note: See these tables in APPENDIX C of the report which is presented in this documentation.

Related Materials

Questionnaires

Demographic and Health Survey 2008-09 - Questionnaire

Title	Demographic and Health Survey 2008-09 - Questionnaire
Author(s)	National Bureau of Statistics MEASURE DHS, ICF Macro
Date	2008-01-01
Country	Kenya
Language	English
Filename	Kenya_DHS_2008_questionnaire.pdf

Reports

Demographic and Health Survey 2008-09 - Final Report

Title	Demographic and Health Survey 2008-09 - Final Report
Author(s)	National Bureau of Statistics MEASURE DHS, ICF Macro
Date	2010-06-01
Country	Kenya
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/FR229/FR229.pdf

Demographic and Health Survey 2008-09 - Fact Sheet

Title	Demographic and Health Survey 2008-09 - Fact Sheet
Author(s)	National Bureau of Statistics MEASURE DHS, ICF Macro
Country	Kenya
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/GF17/GF17.pdf

Demographic and Health Survey 2008-09 - Key Findings

Title	Demographic and Health Survey 2008-09 - Key Findings
Author(s)	National Bureau of Statistics MEASURE DHS, ICF Macro
Date	2010-01-01
Country	Kenya
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/SR178/SR178.pdf