Kenya - Kenya Demographic and Health Survey 2008-09

Kenya National Bureau of Statistics (KNBS)

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Overview

Identification

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KEN-KDHS-2008v01

Version

VERSION DESCRIPTION
Version 1.0

Overview

ABSTRACT
The primary objective of the 2008-09 KDHS, like its predecessors, is to provide up-to-date information for policymakers, planners, researchers, and programme managers. This information guides the planning, implementation, monitoring, and evaluation of population and health programmes in Kenya. Specifically, the survey collects data on the following: fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood and maternal mortality, maternal and child health, malaria and use of mosquito nets, domestic violence, awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs), and HIV prevalence among adults.

The results of the current survey present evidence of a resumption of the fertility decline observed in the 1980s and the 1990s in Kenya. The total fertility rate (TFR) of 4.6 children per woman is the lowest rate ever recorded for Kenya. This decline in fertility could be attributed to an increase in the proportion of currently married women using contraception, which rose from 7 percent in 1978 to 46 percent in 2008-09.

Survey results also indicate a resumption in the decline of childhood mortality. The underfive-mortality rate decreased to 74 deaths per 1,000 live births in 2008-09, down from 115 deaths in 2003, while the infant mortality rate was 52 deaths per 1,000 live births, down from 77 deaths reported in 2003. The improvement in child survival is corroborated by increases in child vaccination coverage, in ownership and use of mosquito bednets, and in antenatal care coverage, all of which have been shown to reduce child mortality. Overall, 77 percent of children age 12-23 months are fully vaccinated, and only three percent have not received any vaccines. Use of mosquito nets is considered to be one of the strongest strategies in the fight against malaria. The survey found that 61 percent of households own at least one mosquito net (treated or untreated), and 56 percent report owning at least one insecticide-treated net (ITN). Fifty-one percent of children under five years and 53 percent of pregnant women slept under a mosquito net the night prior to the interview. The results also indicate that 9 in 10 mothers visited a health professional at least once for antenatal care for the most recent birth in the five-year period preceding the survey. These trends and a plethora of other important findings imply that the deterioration in the quality of life among the Kenyan population seen in earlier surveys has been reversed.

The Kenya National Bureau of Statistics (KNBS) wishes to acknowledge the contributions of the various agencies and institutions that culminated in the compilation of the 2008-09 Kenya Demographic and Health Survey (KDHS). The survey was conducted in close collaboration with the National Public Health Laboratory Services (NPHLS), the National Coordinating Agency for Population and Development (NCAPD), the Kenya Medical Research Institute (KEMRI), the National AIDS Control Council (NACC), ICF Macro, the United Nations Fund for Population Activities (UNFPA), the United Nations Children's Fund (UNICEF), and the United States Agency for International Development (USAID). These institutions provided technical, administrative, and logistical support to the process, for which we are exceedingly grateful. Special thanks go to staff of the Kenya National Bureau of Statistics, Ministry of Public Health and Sanitation, National AIDS Control Council (NACC), National Coordinating Agency for Population and Development (NCAPD), and Kenya Medical Research Institute (KEMRI) who coordinated the survey. Lastly, we acknowledge the financial support provided by USAID, UNFPA, the World Bank, and UNICEF.

UNITS OF ANALYSIS
Clusters, Districts, National, Male and Female, Urban, Rural

Coverage

GEOGRAPHIC COVERAGE

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.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Kenya National Bureau of Statistics (KNBS)	

OTHER PRODUCER(S)

Name	Affiliation	Role
Kenya National Bureau of Statistics (KNBS) National AIDS Control Council (NACC) National AIDS/STD Control Programme (NASCOP) Ministry of Public Health and Sanitation Kenya Medical Research Institute (KEMRI) National Coordinating Agency for Population and Development (NCAPD) MEASURE DHS, ICF Macro, Calverton, Maryland, U.S.A. U.S. Agency for International Development (USAID) United Nations Population Fund (UNFPA) United Nations Children's Fund (UNICEF)		

FUNDING

Name	Abbreviation	Role
Kenya National Bureau of Statistics	KNBS	
National AIDS Control Council	NACC	
National AIDS/STD Control Programme	NASCOP	
Ministry of Public Health and Sanitation		
Kenya Medical Research Institute	KEMRI	
National Coordinating Agency for Population and Development	NCAPD	
MEASURE DHS, ICF Macro, Calverton, Maryland, U.S.A.		
U.S. Agency for International Development	USAID	
United Nations Population Fund	UNFPA	

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Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
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United Nations Children's Fund	UNICEF		

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Sampling

Sampling Procedure

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.

In addition to the standard error, the design effect (DEFT) for each estimate is also calculated. The design effect is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Relative errors and confidence limits for the estimates are also computed. Sampling errors for the 2008-09 KDHS are calculated for selected variables considered to be of primary interest for the women's and men's samples. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for 8 provinces. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.12 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for the selected variables including fertility and mortality rates. The sampling errors for mortality rates are presented for the whole country for the five-year period preceding the survey and by residence and province for the ten-year period preceding the survey. The DEFT is considered undefined when the standard error considering a simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for children ever born to women age 40-49) can be interpreted as follows: the overall average from the national sample is 5.601 and its standard error is 0.144. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate (i.e., 5.601 ± 2×0.144; in others words between 5.313 and 5.888). There is a high probability (95 percent) that the true average number of children ever born to all women aged 40 to 49 is between 5.313 and 5.888.

For the women, the relative standard errors (SE/R) for the means and proportions range between 2 percent and 15 percent, with an average relative standard error of 6.2 percent; the highest relative standard errors are for indicators with very small values (e.g., Currently using IUD at 15 percent, Currently using condom at 15 percent, and maternal mortality ratio at 16 percent). If indicators with very high values of relative standard errors (less those three indicators) were removed, then the average drops to 5.6 percent. So in general, the relative standard error for most indicators for the country as a whole is

small, except for indicators of very small size. The relative standard error for the total fertility rate is small (under 4 percent). However, for the childhood mortality rates, the average relative standard error at the national level is much higher, about 11 percent.

There are differentials in the relative standard error for indicators by sub-populations. For example, for the variable Unmet need for family planning, the relative standard errors as a percent of the estimated mean for the whole country, urban areas and rural areas are 3.2 percent, 5.6 percent, and 3.7 percent, respectively.

For the total women sample, the value of the design effect (DEFT) averaged over all variables is 1.83, which means that due to multi-stage clustering of the sample the average standard error is increased by a factor of 1.83 over that in an equivalent simple random sample.

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 (Table 1.2). 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.

Weighting

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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**

Data Collection Mode

Face-to-face [f2f]

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· Husband's background characteristics and woman's work
· Marriage and sexual activity
· Infant and child feeding practices
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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

No content available