

Nigeria - Demographic and Health Survey 2008

National Population Commission

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Sampling

Sampling Procedure

The sample for the 2008 NDHS was designed to provide population and health indicators at the national, zonal, and state levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of the 6 zones and 37 states (36 states plus the Federal Capital Territory, Abuja). The sampling frame used for the 2008 NDHS was the 2006 Population and Housing Census of the Federal Republic of Nigeria conducted in 2006, provided by the National Population Commission (NPC).

Administratively, Nigeria is divided into states. Each state is subdivided into local government areas (LGAs), and each LGA is divided into localities. In addition to these administrative units, during the 2006 Population Census, each locality was subdivided into convenient areas called census enumeration areas (EAs). The primary sampling unit (PSU), referred to as a cluster for the 2008 NDHS, is defined on the basis of EAs from the 2006 EA census frame. The 2008 NDHS sample was selected using a stratified two-stage cluster design consisting of 888 clusters, 286 in the urban and 602 in the rural areas. The final survey sample included 886 instead of 888 clusters. During fieldwork, access was not obtained in one cluster due to flooding, and in another cluster due to inter-communal disturbances). A representative sample of 36,800 households was selected for the 2008 NDHS survey, with a minimum target of 950 completed interviews per state. In each state, the number of households was distributed proportionately among its urban and rural areas.

A complete listing of households and a mapping exercise were carried out for each cluster from April to May 2008, with the resulting lists of households serving as the sampling frame for the selection of households in the second stage. All private households were listed. The NPC listing enumerators were trained to use Global Positioning System (GPS) receivers to take the coordinates of the 2008 NDHS sample clusters.

In the second stage of selection, an average of 41 households was selected in each cluster, by equal probability systematic sampling. All women age 15-49 who were either permanent residents of the households in the 2008 NDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. In a sub-sample of half of the households, all men age 15-59 who were either permanent residents of the households in the 2008 NDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. In addition, a sub-sample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

Response Rate

A total of 36,298 households were selected and of these 34,644 were occupied. Of the 34,644 households found, 34,070 were successfully interviewed, yielding a response rate of 98 percent. There is no significant difference between rural and urban areas in terms of response rates.

In the interviewed households, a total of 34,596 women were identified to be eligible for the individual interview, and 97 percent of them were successfully interviewed. For men, 16,722 were identified as eligible in half the households, and 93 percent of them were successfully interviewed.

Questionnaires

Overview

Three questionnaires were used for the 2008 NDHS. They are the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. These questionnaires were adapted to reflect the population and health issues relevant to Nigeria at a series of meetings with various stakeholders from government ministries and agencies, non-governmental organisations, and international donors. In addition to English, the questionnaires were translated into three major Nigerian languages: Hausa, Igbo, and Yoruba.

a) 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. If a child in the household had a parent who was sick for more than three consecutive months in the 12 months preceding the survey or a parent who had died, additional questions related to support for orphans and vulnerable children were asked. Additionally, if an adult in the household was sick for more than three consecutive months in the 12 months preceding the survey or an adult in the household died, questions were asked related to support for sick people or people in households where a household member has died. 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 Household Questionnaire was also used to record height and weight measurements for children age 0-59 months and women age 15-49.

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

- Background characteristics (education, residential history, 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 and young child feeding practices
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Women's work and husband's background characteristics
- Women's and children's nutritional status
- Malaria prevention and treatment
- Awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs)
- Adult mortality including maternal mortality
- Women's status and health outcomes
- Fistulae
- Domestic violence
- Female genital cutting

c) The Men's Questionnaire was administered to all men age 15-59 in every second household in the 2008 NDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health or nutrition.

Data Collection

Data Collection Dates

Start	End	Cycle
2008-06	2008-10	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

PRE-TEST ACTIVITIES

The training for the pre-test took place March 3-12, 2008. Thirty-two interviewers (15 females and 17 males) were trained to administer the questionnaires and take anthropometric measurements. The pre-test training for the interviewers and supervisors consisted of a project overview and survey objectives, techniques of interviewing, field procedures, a detailed description of all sections of the household and individual questionnaires, and two days of field practice. The trainers/resource people included professionals from NPC and ICF Macro.

The pre-test was conducted in 6 states by 6 teams March 15-22, 2008. The teams were divided according to languages. There were 2 Hausa teams in the North East and North West zones, 2 English teams in the South South and North Central zones, 1 Yoruba team in the South West, and 1 Igbo team in the South East. The supervisors and editors were drawn from the NPC core technical team. The teams covered 6 zones (one state in each zone) and aimed at completing 25 urban and 25 rural households per state. At the end of fieldwork, a debriefing session was held March 24-25, 2008 in Kaduna with all staff involved in the pre-test, and the questionnaires were amended based on the pre-test findings.

TRAINING OF FIELD STAFF

NPC recruited and trained 368 people for the fieldwork to serve as zonal coordinators, supervisors, field editors, female and male interviewers, reserve interviewers, and quality control interviewers. Training of field staff for the main survey was conducted during a three-week period in May-June 2008. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of items on the questionnaires, 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 2008 NDHS sample points. During this period, field editors, team supervisors, and quality control interviewers were provided with additional training in methods of field editing, data quality control procedures, and fieldwork coordination. Thirty-seven supervisors, 37 editors, 152 female interviewers, and 74 male interviewers were selected to make up 37 data collection teams for the 2008 NDHS. Thirty-seven people were selected to be quality control interviewers.

FIELDWORK

Thirty-seven interviewing teams carried out data collection for the 2008 NDHS. Each team consisted of 1 supervisor (team leader), 1 field editor, 4 female interviewers, 2 male interviewers, and 2 drivers. Nineteen senior staff members from NPC, designated as zonal coordinators, coordinated and supervised fieldwork activities. Data collection took place over a four-month period from June to October 2008.

Data Collectors

Name	Abbreviation	Affiliation
National Population Commission		

Data Processing

Data Editing

All questionnaires for the 2008 NDHS were returned to the NPC headquarters office in Abuja 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 30 data entry operators, 3 data coders, 4 data entry supervisors, and 8 secondary editors. Data entry and editing were accomplished using the CSPro software. The processing of data was initiated in July 2008 and completed in February 2009.

Data Appraisal

Estimates of Sampling Error

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2008 NDHS 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.

A 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 NDHS 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 NDHS uses the Taylor linearisation 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.

The Taylor linearisation method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y , and x represents the total number of cases in the group or subgroup under consideration. The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulas. Each replication considers all but one cluster in the calculation of the estimates. Pseudo-independent replications are thus created. In the 2008 NDHS, there were 886 non-empty clusters. Hence, 886 replications were created.

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 NDHS are calculated for selected variables considered to be of primary interest for the women's and men's samples. The results are presented in an appendix to the Final Report for the country as a whole, for urban and rural areas, and for 6 regions. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table C.1 of the Final Report. Tables C.2 to C.10 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 ($R \pm 2SE$), for the selected variables including fertility and mortality rates. The sampling errors for mortality rates except for the entire country are presented for the 10 years 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 6.507 and its standard error is 0.057. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate (i.e., 6.507 \pm 0.114; in other words between 6.392 and 6.622). There is a high probability (95 percent) that the true average number of children ever born to all women aged 40-49 is between 6.392 and 6.622.

For the women sampling errors and not taking into consideration the estimate for using female sterilisation, the relative standard errors (SE/R) for the means and proportions range between 2 and 8.8 percent, with an average relative standard error of 2.99 percent; the highest relative standard errors are for estimates of very low values (e.g., currently using IUD-1 percent-has 8.8 percent of relative error). So in general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 1.4 percent. However, for the mortality rates, the average relative standard error for the past five-year period mortality rates is much higher, about 3.2 percent.

There are differentials in the relative standard error for the estimates of women sub-populations. For example, for the variable want no more children, the relative standard errors as a percent of the estimated mean for the whole country, urban total area and for the rural total area are 2.1 percent, 3.0 percent and 2.7 percent, respectively. For the total women sample, the value of the design effect (DEFT) averaged over all variables is 1.86, which means that due to multi-stage clustering of the sample the average standard error is increased by a factor of 1.86 over that in an equivalent simple random sample.

Other forms of Data Appraisal

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 Nigeria DHS (2008 NDHS) to minimise this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Related Materials

Questionnaires

Nigeria Demographic and Health Survey 2008 - Household Questionnaire

Title	Nigeria Demographic and Health Survey 2008 - Household Questionnaire
Author(s)	National Population Commission
Date	2008-03-01
Country	Nigeria
Language	English
Contributor(s)	ICF Macro
Description	<p>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. If a child in the household had a parent who was sick for more than three consecutive months in the 12 months preceding the survey or a parent who had died, additional questions related to support for orphans and vulnerable children were asked. Additionally, if an adult in the household was sick for more than three consecutive months in the 12 months preceding the survey or an adult in the household died, questions were asked related to support for sick people or people in households where a household member has died. 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 Household Questionnaire was also used to record height and weight measurements for children age 0-59 months and women age 15-49.</p>
Filename	NGA_DHS_2008_Questionnaire_Household_En.pdf

Nigeria Demographic and Health Survey 2008 - Woman's Questionnaire

Title	Nigeria Demographic and Health Survey 2008 - Woman's Questionnaire
Author(s)	National Population Commission
Date	2008-03-01
Country	Nigeria
Language	English
Contributor(s)	ICF Macro
Description	<p>The Women's Questionnaire was used to collect information on all women age 15-49. These women were asked questions on the following main topics:</p> <ul style="list-style-type: none"> - Background characteristics (education, residential history, 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 and young child feeding practices - Vaccinations and childhood illnesses - Marriage and sexual activity - Women's work and husband's background characteristics - Women's and children's nutritional status - Malaria prevention and treatment - Awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs) - Adult mortality including maternal mortality - Women's status and health outcomes - Fistulae - Domestic violence - Female genital cutting

Filename NGA_DHS_2008_Questionnaire_Woman_En.pdf

Nigeria Demographic and Health Survey 2008 - Man's Questionnaire

Title	Nigeria Demographic and Health Survey 2008 - Man's Questionnaire
Author(s)	National Population Commission
Date	2008-03-01
Country	Nigeria
Language	English
Contributor(s)	ICF Macro
Description	The Men's Questionnaire was administered to all men age 15-59 in every second household in the 2008 NDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health or nutrition.
Filename	NGA_DHS_2008_Questionnaire_Man_En.pdf

Reports

Nigeria Demographic and Health Survey 2008 - Final report

Title	Nigeria Demographic and Health Survey 2008 - Final report
Author(s)	National Population Commission
Date	2009-11-01
Country	Nigeria
Language	English
Contributor(s)	ORC/Macro
Description	<p>Comprehensive survey results are published in the DHS Final Reports approximately 8-12 months after the completion of fieldwork. Standard reports are approximately 200 pages in length and include, but are not limited to, topics such as: household and respondent characteristics, fertility and family planning, maternal and child health, nutrition, and HIV/AIDS.</p> <p>The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was implemented by the National Population Commission (NPC) and fielded from June to October 2008. ICF Macro provided technical assistance as well as funding to the survey through MEASURE DHS, a project funded by the United States Agency for International Development (USAID) that provides support and technical assistance for the implementation of population and health surveys in countries worldwide. Funding for the survey was provided by USAID and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Funding for the household listing and additional fieldwork support was provided by the United Nations Population Fund (UNFPA). The views expressed in this publication are those of the authors and do not necessarily reflect the views of the Government of Nigeria, the United States Government, or donor organizations.</p>
Filename	http://www.dhsprogram.com/pubs/pdf/FR222/FR222.pdf

Nigeria Demographic and Health Survey 2008 - Key Findings

Title	Nigeria Demographic and Health Survey 2008 - Key Findings
Author(s)	National Population Commission
Date	2009-11-01
Country	Nigeria
Language	English
Contributor(s)	ORC/Macro

Summary Reports provide a colorful synopsis of the more comprehensive DHS Final Report and highlight key findings from each country's survey. In most cases, they are published in the language of the country, and are designed for use by policy makers and program planners in the survey countries.

Description	The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was implemented by the National Population Commission (NPC) and fielded from June to October 2008. ICF Macro provided technical assistance as well as funding to the survey through MEASURE DHS, a project funded by the United States Agency for International Development (USAID) that provides support and technical assistance for the implementation of population and health surveys in countries worldwide. Funding for the survey was provided by USAID and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Funding for the household listing and additional fieldwork support was provided by the United Nations Population Fund (UNFPA). The views expressed in this publication are those of the authors and do not necessarily reflect the views of the Government of Nigeria, the United States Government, or donor organizations.
Filename	http://www.dhsprogram.com/pubs/pdf/SR173/SR173.pdf

Nigeria Demographic and Health Survey 2008 - Fact sheet

Title	Nigeria Demographic and Health Survey 2008 - Fact sheet
Author(s)	National Population Commission
Date	2009-11-01
Country	Nigeria
Language	English
Contributor(s)	ORC/Macro
	General fact sheets summarize the major results of DHS or AIS surveys in a brochure format. They usually show the most important 8 indicators in chart form and often include an 11"x17" table of the key indicators broken down by residence (urban/rural) and region.
Description	The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was implemented by the National Population Commission (NPC) and fielded from June to October 2008. ICF Macro provided technical assistance as well as funding to the survey through MEASURE DHS, a project funded by the United States Agency for International Development (USAID) that provides support and technical assistance for the implementation of population and health surveys in countries worldwide. Funding for the survey was provided by USAID and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Funding for the household listing and additional fieldwork support was provided by the United Nations Population Fund (UNFPA). The views expressed in this publication are those of the authors and do not necessarily reflect the views of the Government of Nigeria, the United States Government, or donor organizations.
Filename	http://www.dhsprogram.com/pubs/pdf/GF15/GF15.pdf

Nigeria Demographic and Health Survey 2008 - Nigeria South West Zonal Fact Sheet

Title	Nigeria Demographic and Health Survey 2008 - Nigeria South West Zonal Fact Sheet
Author(s)	National Population Commission
Date	2009-11-01
Country	Nigeria
Language	English
Contributor(s)	ORC/Macro
Filename	http://www.dhsprogram.com/pubs/pdf/OF12/OF12.SW.1.english.pdf

Nigeria Demographic and Health Survey 2008 - Nigeria North Est Zonal Fact Sheet

Title	Nigeria Demographic and Health Survey 2008 - Nigeria North Est Zonal Fact Sheet
Author(s)	National Population Commission
Date	2009-11-01
Country	Nigeria
Language	English

Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.NE.3.english.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria North West Zonal Fact Sheet

Title Nigeria Demographic and Health Survey 2008 - Nigeria North West Zonal Fact Sheet
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language English
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.NW.4.english.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria South Est Zonal Fact Sheet

Title Nigeria Demographic and Health Survey 2008 - Nigeria South Est Zonal Fact Sheet
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language English
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.SE.5.english.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria South South Zonal Fact Sheet

Title Nigeria Demographic and Health Survey 2008 - Nigeria South South Zonal Fact Sheet
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language English
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.SS.6.english.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria North West Zonal Fact Sheet - Hausa

Title Nigeria Demographic and Health Survey 2008 - Nigeria North West Zonal Fact Sheet - Hausa
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language Hausa
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.NW.7.Hausa.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria North Est Zonal Fact Sheet - Hausa

Title Nigeria Demographic and Health Survey 2008 - Nigeria North Est Zonal Fact Sheet - Hausa

Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language Hausa
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.NE.9.Hausa.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria South Est Zonal Fact Sheet - Igbo

Title Nigeria Demographic and Health Survey 2008 - Nigeria South Est Zonal Fact Sheet - Igbo
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language Igbo
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.SE.10.Igbo.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria South West Zonal Fact Sheet - Yoruba

Title Nigeria Demographic and Health Survey 2008 - Nigeria South West Zonal Fact Sheet - Yoruba
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language Yoruba
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.SW.11.Yoruba.pdf>

Nigeria Demographic and Health Survey 2008 - Nigeria North Central Zonal Fact Sheet

Title Nigeria Demographic and Health Survey 2008 - Nigeria North Central Zonal Fact Sheet
 Author(s) National Population Commission
 Date 2009-11-01
 Country Nigeria
 Language English
 Contributor(s) ORC/Macro
 Filename <http://www.dhsprogram.com/pubs/pdf/OF12/OF12.NC.2.english.pdf>
