Ghana - Demographic and Health Survey 2014

Ghana Statistical Service (GSS) - Government of Ghana, Ghana Health Service (GHS) - Government of Ghana, National Public National Public Health Reference Laboratory (NPHRL) - Government of Ghana

Report generated on: June 1, 2017

Sampling

Sampling Procedure

The sampling frame used for the 2014 GDHS is an updated frame from the 2010 Ghana Population and Housing Census provided by the Ghana Statistical Service (GSS 2013b). The sampling frame excluded nomadic and institutional populations such as persons in hotels, barracks, and prisons.

The 2014 GDHS followed a two-stage sample design and was intended to allow estimates of key indicators at the national level as well as for urban and rural areas and each of Ghana's 10 administrative regions. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) delineated for the 2010 PHC. A total of 427 clusters were selected, 216 in urban areas and 211 in rural
areas.

The second stage involved the systematic sampling of households. A household listing operation was undertaken in all the selected EAs in January-March 2014, and households to be included in the survey were randomly selected from the list. About 30 households were selected from each cluster to constitute the total sample size of 12,831 households. Because of the approximately equal sample sizes in each region, the sample is not self-weighting at the national level, and weighting factors have been added to the data file so that the results will be proportional at the national level.

All women age 15-49 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 and have their blood pressure measured.

In half of the households, all men age 15-59 who were either permanent residents of the selected households or visitors who stayed in the households the night before the survey were eligible to be interviewed. In addition, in the subsample of households selected for the male survey:
• blood pressure measurements were performed among eligible men who consented to being tested;
• children age 6-59 months were tested for anaemia and malaria with the parent's or guardian's consent;
• eligible women who consented were tested for anaemia;
• blood samples were collected for laboratory testing of HIV from eligible women and men who consented; and
• height and weight information was collected from eligible women, men, and children age 0- 59 months.

For further details on sample selection, see Appendix A of the final report.

Response Rate

A total of 12,831 households were selected for the sample, of which 12,010 were occupied. Of the occupied households, 11,835 were successfully interviewed, yielding a response rate of 99 percent, the same as the 2008 GDHS household response rate (GSS, GHS, and ICF Macro 2009).

In the interviewed households, 9,656 eligible women were identified for individual interviews; interviews were completed with 9,396 women, yielding a response rate of 97 percent. In the subsample of households selected for the male survey, 4,609 eligible men were identified and 4,388 were successfully interviewed, yielding a response rate of 95 percent. The lower response rate for men was likely due to their more frequent and longer absences from the household.

Questionnaires

Overview

Three questionnaires were used for the 2014 GDHS: the Household Questionnaire, the Woman's Questionnaire, and the Man's Questionnaire. These questionnaires, which were based on standard Demographic and Health Survey (DHS) questionnaires, were adapted to reflect the population and health issues relevant to Ghana. Comments on the questionnaires were solicited from various stakeholders representing government ministries and agencies, nongovernmental organisations, and international donors. The definitive questionnaires were first prepared in English; they were then translated into the major local languages, namely Akan, Ga, and Ewe.

The Household Questionnaire was used to list all the members of and visitors to the selected households. Basic demographic information was collected on the characteristics of each person listed, including his or her age, sex, marital status, education, and relationship to the head of the household. For children under age 18, parents' survival status was determined. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women and men who were eligible for individual interviews. The Household Questionnaire also included questions on child education as well as the characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for the floor of the dwelling unit, and ownership of various durable goods.

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

In half of the selected households, the Man's Questionnaire was administered to all men age 15-59. 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.

Data Collection

Data Collection Dates

Start	End	Cycle
2014-09	2014-12	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Training of Field Staff
Training of the field staff took place over four weeks (4-30 August 2014) with 139 field data collectors (67 women and 72 men) and 55 health technicians (26 women and 29 men). Training was conducted at the Winneba Windy Lodge Hotel in the Central Region about 65 kilometres from Accra.

During the first week, all trainees were instructed in standard DHS procedures, including general interviewing techniques, conducting interviews at the household level, and measuring blood pressures. During the second week, health technicians began separate biomarker training while the other field staff (data collectors) continued to train on the Woman's and the Man's questionnaires, including a detailed review of each question and mock interviews between participants in the classroom. To provide the health technicians with practical experience measuring anthropometry among children, representatives from UNICEF and GHS organised a standardisation exercise with the health technicians. Measurements from health technicians were compared to a reference measure, which helped health technicians correct and improve on their measurement techniques whenever applicable.

All trainees were also given an overview of the 2014 GDHS biomarker collection protocol that summarised eligibility for each biomarker, appropriate procedures for obtaining informed consent, and sample transportation logistics. In addition, nine data entry personnel (seven women and two men) attended the first two weeks of questionnaire training, so that they would be familiar with the survey instruments at a later stage when they received and entered data from the completed questionnaires. During the final week, ICF staff trained field editors in the computer assisted field editing (CAFE) system. Field supervisors were trained in the collection of global positioning system (GPS) data using the Garmin eTrex10 model.

Practice interviews with real respondents took place over a course of three days (24-26 August 2014) in areas outside the 2014 GDHS sample points.

Participants were evaluated through homework, in-class exercises, quizzes, and observations made during field practice. After training, they were assigned to 25 teams composed of one supervisor, one field editor, two female interviewers, one male interviewer, and two health technicians. Fourteen interviewers and five health technicians were selected as reserve staff.

Fieldwork
Data collection was carried out by the 25 field teams from early September to mid-December 2014. Senior staff members from the Ghana Statistical Service and the Ghana Health Service coordinated and monitored the fieldwork. Paper questionnaires were used to conduct the interviews. After the interviews, field editors entered the questionnaire data into laptops, using passwords to protect the files. Electronic data files were transferred to the central office every few days via the secured Internet File Streaming System (IFSS). Fieldwork monitoring was carried out by staff of GSS, GHS, and two survey technical specialists from The DHS Program. Data collection took 3.5 months.

Data Collectors

Name	Abbreviation	Affiliation
Ghana Statistical Service	GSS	Government of Ghana

SUPERVISION

Fieldwork monitoring was carried out by staff of GSS, GHS, and two survey technical specialists from The DHS Program.

Data Processing

Data Editing

The data processing operation included 100 percent verification (also called second data entry) and secondary editing, which involved resolution of computer-identified inconsistencies. The data processing activities at the central office were led by one key GSS officer who took part in the main fieldwork training. Data processing was accomplished using CSPro software. Data entry and editing were initiated in September 2014 and completed in February 2015.

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 2014 Ghana DHS (GDHS) 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 2014 GDHS 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 2014 GDHS 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 linearization 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.

The Taylor linearization 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.

Note: A more detailed description of estimate of sampling error is presented in APPENDIX B of the survey 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 based on the NCHS/CDC/WHO International Reference Population

Note: See detailed data quality tables in APPENDIX C of the report.

Related Materials

Questionnaires

Ghana Demographic and Health Survey 2014, Household Questionnaire

Title	Ghana Demographic and Health Survey 2014, Household Questionnaire
Author(s)	Ministry of Health, Ghana Ghana Statistical Service
Date	2014-08-20
Country	Ghana
Language	English
Filename	Ghana_2014_DHS_hh_questionnaire.pdf

Ghana Demographic and Health Survey 2014, Woman's Questionnaire

Title	Ghana Demographic and Health Survey 2014, Woman's Questionnaire
Author(s)	Ministry of Health, Ghana Ghana Statistical Service
Date	2014-08-22
Country	Ghana
Language	English
Filename	Ghana_2014_DHS_woman_questionnaire.pdf

Ghana Demographic and Health Survey 2014, Man's Questionnaire

Title	Ghana Demographic and Health Survey 2014, Man's Questionnaire
Author(s)	Ministry of Health, Ghana Ghana Statistical Service
Date	2014-08-22
Country	Ghana
Language	English
Filename	Ghana_2014_DHS_man_questionnaire.pdf

Reports

Ghana Demographic and Health Survey 2014, Report

Title	Ghana Demographic and Health Survey 2014, Report
Author(s)	Ghana Statistical Service, Accra, Ghana Ghana Health Service, Accra, Ghana The DHS Program, ICF International, Rockville, Maryland, USA
Date	2015-10-01
Country	Ghana
Language	English

Table of contents

Filename http://dhsprogram.com/pubs/pdf/FR307/FR307.pdf

Ghana 2014 Demographic and Health Survey, Key Findings

Title	Ghana 2014 Demographic and Health Survey, Key Findings
Author(s)	The DHS Program
Date	2015-09-01
Country	Ghana
Language	English
Description	This report summarises the findings of the 2014 Ghana Demographic and Health Survey (2014 GDHS), implemented by the Ghana Statistical Service (GSS), the Ghana Health Service (GHS), and the National Public Health and Reference Laboratory (NPHRL) of the GHS.
Filename	http://dhsprogram.com/pubs/pdf/SR224/SR224.pdf

Fast Facts from The 2014 Ghana Demographic and Health Survey

Title	Fast Facts from The 2014 Ghana Demographic and Health Survey
Author(s)	The DHS Program
Date	2015-09-01
Country	Ghana
Language	English
Filename	http://dhsprogram.com/pubs/pdf/DM70/DM70.pdf