

Ghana - Demographic and Health Survey 2008

Ghana Statistical Services (GSS), Ministry of Health

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Sampling

Sampling Procedure

The 2008 GDHS was a household-based survey, implemented in a representative probability sample of more than 12,000 households selected nationwide. This sample was selected in such a manner as to allow for separate estimates of key indicators for each of the 10 regions in Ghana, as well as for urban and rural areas separately.

The 2008 GDHS utilised a two-stage sample design. The first stage involved selecting sample points or clusters from an updated master sampling frame constructed from the 2000 Ghana Population and Housing Census. A total of 412 clusters were selected from the master sampling frame. The clusters were selected using systematic sampling with probability proportional to size. A complete household listing operation was conducted from June to July 2008 in all the selected clusters to provide a sampling frame for the second stage selection of households.

The second stage of selection involved the systematic sampling of 30 of the households listed in each cluster. The primary objectives of the second stage of selection were to ensure adequate numbers of completed individual interviews to provide estimates for key indicators with acceptable precision and to provide a sample large enough to identify adequate numbers of under-five deaths to provide data on causes of death.

Data were not collected in one of the selected clusters due to security reasons, resulting in a final sample of 12,323 selected households. Weights were calculated taking into consideration cluster, household, and individual non-responses, so the representations were not distorted.

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

Response Rate

A total of 12,323 households were selected in the sample, of which 11,913 were occupied at the time of the fieldwork. This difference between selected and occupied households occurred mainly because some of the selected structures were found to be vacant or destroyed. The number of occupied households successfully interviewed was 11,778, yielding a household response rate of 99 percent.

In the households selected for individual interview in the survey (50 percent of the total 2008 GDHS sample), a total of 5,096 eligible women were identified; interviews were completed with 4,916 of these women, yielding a response rate of 97 percent. In the same households, a total of 4,769 eligible men were identified and interviews were completed with 4,568 of these men, yielding a response rate of 96 percent. The response rates are slightly lower among men than women.

The principal reason for non-response among both eligible women and men was the failure to find individuals at home despite repeated visits to the household. The lower response rate for men reflects the more frequent and longer absences of men from the household.

Note: See summarized response rates by place of residence in Table 1.1 of the survey report.

Questionnaires

Overview

Three questionnaires were used for the 2008 GDHS: the Household Questionnaire, the Women's Questionnaire and the Men's Questionnaire. The content of these questionnaires was based on model questionnaires developed by the MEASURE DHS programme and the 2003 GDHS Questionnaires.

A questionnaire design workshop organised by GSS was held in Accra to obtain input from the Ministry of Health and other stakeholders on the design of the 2008 GDHS Questionnaires. Based on the questionnaires used for the 2003 GDHS, the workshop and several other informal meetings with various local and international organisations, the DHS model questionnaires were modified to reflect relevant issues in population, family planning, domestic violence, HIV/AIDS, malaria and other health issues in Ghana. These questionnaires were translated from English into three major local languages, namely Akan, Ga, and Ewe. The questionnaires were pre-tested in July 2008. The lessons learnt from the pre-test were used to finalise the survey instruments and logistical arrangements.

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Some 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 and men who were eligible for the individual interview. 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 and roof of the house, ownership of various durable goods, and ownership and use of mosquito nets. The Household Questionnaire was also used to record height and weight measurements, consent for, and the results of, haemoglobin measurements for women age 15-49 and children under five years. The haemoglobin testing procedure is described in detail in the next section.

The Household Questionnaire was also used to record all deaths of household members that occurred since January 2003. Based on this information, in each household that reported the death of a child under age five years since January 2005,³ field editors administered a Verbal Autopsy Questionnaire. Data on child mortality based on the verbal autopsy will be presented in a separate publication.

The Women's Questionnaire was used to collect information from all women age 15-49 in half of selected households. These women were asked questions about themselves and their children born in the five years since 2003 on the following topics: education, residential history, media exposure, reproductive history, knowledge and use of family planning methods, fertility preferences, antenatal and delivery care, breastfeeding and infant and young child feeding practices, vaccinations and childhood illnesses, marriage and sexual activity, woman's work and husband's background characteristics, childhood mortality, awareness and behaviour about AIDS and other sexually transmitted infections (STIs), awareness of TB and other health issues, and domestic violence.

The Women's Questionnaire included a series of questions to obtain information on women's exposure to malaria during their most recent pregnancy in the five years preceding the survey and the treatment for malaria. In addition, women were asked if any of their children born in the five years preceding the survey had fever, whether these children were treated for malaria and the type of treatment they received.

The Men's Questionnaire was administered to all men age 15-59 living in half of the selected households in the GDHS 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 reproductive history or questions on maternal and child health or nutrition.

Data Collection

Data Collection Dates

Start	End	Cycle
2008-09-08	2008-11-25	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

PRE-TEST

Pre-test training and practice fieldwork were conducted from 23 June to 12 July 2008 for 14 participants: seven women and seven men. Training entailed classroom discussions and practice focusing on the three questionnaires: Household Questionnaire, Women's Questionnaire, and Men's questionnaire. Two trainers assigned by the GSS conducted the training with support from ICF Macro. Guest speakers from the MOH were invited to make short presentations on family planning, child health, and nutrition programmes in place in Ghana. The participants, most of whom had been involved in the previous DHS survey, actively discussed the questionnaires and made suggestions for modifications. Based on these suggestions, all versions of the questionnaires (English, Akan, Ewe, and Ga) were updated for the pre-test fieldwork.

Pre-test fieldwork was done in several stages. Interviewers were divided into four teams and during the period July 7-11 all teams worked in three urban areas and two rural areas. A total of 68 women's interviews, 66 men's interviews, and 79 household interviews were completed. Interviews were conducted in English, Akan, Ewe, and Ga. By the end of the pre-test, a few errors in skip patterns and translation were identified and corrected.

TRAINING AND FIELDWORK

Fieldwork training began on 11 August 2008 at Winneba Sports College, located about 35 miles west of Accra. Three weeks of training on the GDHS were followed by three days of training on the Verbal Autopsy Questionnaire for deaths of children under five years. A total of 160 persons were trained on the GDHS at one training location. The first week of training also included 10 data entry personnel. Most of the trainees had prior experience as interviewers in previous GDHS surveys. The trainees were also recruited on the basis of language skills. Interviewer training was conducted mostly in English by senior staff from GSS, with technical input from ICF Macro. In addition, resource persons from other agencies made presentations on family planning, Ghana's programme on Integrated Management of Childhood Illnesses (IMCI), nutrition and anthropometric measurements, and malaria. All participants were trained on interviewing techniques and the contents of the GDHS questionnaires. The training was conducted following the standard DHS training procedures, including class presentations, mock interviews, and written tests. All of the participants were trained on how to complete the Household Questionnaire, the Women's Questionnaire and the Men's Questionnaire, and how to collect anthropometric measurements. In addition to interviewer training, all female interviewers were trained in anaemia testing and in informed consent procedures. Training included four days of field practice, three days implementing the Household and Individual Questionnaires, and one day implementing the Verbal Autopsy Questionnaires. Trainees also practiced interviewing (mock interviews) in English as well as in the local languages. During training, it was emphasised that only female interviewers interview respondents for the Women's Questionnaire and only male interviewers interview respondents for the Men's Questionnaire. Trainees selected as supervisors and field editors were given an additional two days of training on how to supervise fieldwork and edit questionnaires, followed by three days of training on the Verbal Autopsy Questionnaire for deaths of children under five years.

At the end of the main training 23 teams were designated to carry out the fieldwork. Each team was composed of one supervisor, one editor, two female interviewers, two male interviewers, and a driver. A standby list of 22 people was kept for replacement in cases of interviewer attrition. Interviewers were selected on the basis of in-class participation, field practice, fluency in the Ghanaian languages, and an assessment test. The most experienced trainees, those who had participated in the pre-test and those who did extremely well during the training were selected to be supervisors and editors.

Senior staff from GSS coordinated and supervised the fieldwork activities. ICF Macro participated in field supervision of interviews, weight and height measurements, and blood sample collection. Data collection took place over a two and half-month period, from early September to late November 2008.

Data Processing

Data Editing

The processing of the GDHS results began shortly after the fieldwork commenced. Completed questionnaires were returned periodically from the field to the GSS office in Accra, where they were entered and edited by data processing personnel who were specially trained for this task. Data were entered using CSPro, a programme specially developed for use in DHS surveys. All data were entered twice (100 percent verification). The concurrent processing of the data was a distinct advantage for data quality, because GSS had the opportunity to advise field teams of problems detected during data entry. The data entry and editing phase of the survey was completed in February 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 Ghana DHS (2008 GDHS) 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 2008 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.

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 formulae for calculating sampling errors. However, the 2008 GDHS sample is the result of a multi-stage, stratified design and, consequently, it was necessary to use more complex formulae, specifically, the Taylor linearisation method of variance estimation, to calculate sampling errors for means or proportions from the survey. 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 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 by NCHS/CDC/WHO International Reference Population

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

Related Materials

Questionnaires

2008 Demographic and Health Survey - Questionnaire

Title 2008 Demographic and Health Survey - Questionnaire
 Author(s) Ghana Statistical Service (GSS) Ghana Health Service ICF Macro, Calverton, Maryland USA
 Date 2008-09-01
 Country Ghana
 Language English
 Filename Doc/Questionnaires/Ghana_2008_DHS_questionnaire.pdf

Reports

2008 Demographic and Health Survey - Report

Title 2008 Demographic and Health Survey - Report
 Author(s) Ghana Statistical Service (GSS), Accra, Ghana Ghana Health Service, Accra, Ghana ICF Macro, Calverton, Maryland USA
 Date 2009-09-01
 Country Ghana
 Language English
 Description This report summarises the findings of the 2008 Ghana Demographic and Health Survey (GDHS) carried out by the Ghana Statistical Service and the Ghana Health Service.
 Filename <http://www.dhsprogram.com/pubs/pdf/FR221/FR221.pdf>

2008 Demographic and Health Survey - Key Findings

Title 2008 Demographic and Health Survey - Key Findings
 Author(s) MEASURE DHS
 Date 2009-09-01
 Country Ghana
 Language English
 Filename <http://www.dhsprogram.com/pubs/pdf/SR172/SR172.pdf>

2008 Demographic and Health Survey - Fact Sheet

Title 2008 Demographic and Health Survey - Fact Sheet
 Author(s) MEASURE DHS
 Date 2009-09-01
 Country Ghana
 Language English
 Filename <http://www.dhsprogram.com/pubs/pdf/GF14/GF14.pdf>

2008 Demographic and Health Survey - Children's Health and Nutritional Status

in Ghana

Title 2008 Demographic and Health Survey - Children's Health and Nutritional Status in Ghana

Author(s) MEASURE DHS

Date 2009-09-01

Country Ghana

Language English

Filename <http://www.dhsprogram.com/pubs/pdf/DM17/DM17.pdf>
