

Zimbabwe - Demographic and Health Survey 2005-2006

Central Statistical Office (CSO)

Report generated on: June 16, 2017

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Sampling

Sampling Procedure

The sample for the 2005-06 ZDHS was designed to provide population and health indicator estimates at the national and provincial levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of the 10 provinces (Manicaland, Mashonaland Central, Mashonaland East, Mashonaland West, Matabeleland North, Matabeleland South, Midlands, Masvingo, Harare, and Bulawayo). The sampling frame used for the 2005-06 ZDHS was the 2002 Zimbabwe Master Sample (ZMS02) developed by CSO after the 2002 population census. With the exception of Harare and Bulawayo, each of the other eight provinces was stratified into four strata according to land use: communal lands, large-scale commercial farming areas (LSCFA), urban and semi-urban areas, smallscale commercial farming areas (SSCFA), and resettlement areas. Only one urban stratum was formed each for Harare and Bulawayo, providing a total of 34 strata.

A representative probability sample of 10,800 households was selected for the 2005-06 ZDHS. The sample was selected in two stages with enumeration areas (EAs) as the first stage and households as the second stage sampling units. In total 1,200 EAs were selected with probability proportional to size (PPS), the size being the number of households enumerated in the 2002 census. The selection of the EAs was a systematic, one-stage operation carried out independently for each of the 34 strata. The 1,200 ZMS02 EAs were divided into three replicates of 400 EAs each. One of the replicates consisting of 400 EAs was used for the 2005-06 ZDHS. In the second stage, a complete listing of households and mapping exercise was carried out for each cluster in January 2005. The list of households obtained was used as the frame for the second stage random selection of households. The listing excluded people living in institutional households (army barracks, hospitals, police camps, boarding schools, etc.). CSO provincial supervisors also trained provincial CSO officers to use global positioning system (GPS) receivers to take the coordinates of the 2005-06 ZDHS sample clusters.

All women age 15-49 and all men age 15-54 who were either permanent residents of the households in the 2005-06 ZDHS sample or visitors present in the household on the night before the survey were eligible to be interviewed. Anaemia and HIV testing was performed in each household among eligible women and men who consented to either or both tests. With the parent's or guardian's consent, children age 6-59 months were tested for anaemia in each household. In addition, a sub-sample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

Note: See detailed sample implementation summary tables in Appendix A of the Final Report.

Response Rate

A total of 10,752 households were selected for the sample, of which 9,778 were currently occupied. The shortfall was largely due to some households no longer existing in the sampled clusters at the time of the interview. Of the 9,778 existing households, 9,285 were successfully interviewed, yielding a household response rate of 95 percent.

In the interviewed households, 9,870 eligible women were identified and, of these, 8,907 were interviewed, yielding a response rate of 90 percent. Of the 8,761 eligible men identified, 7,175 were successfully interviewed (82 percent response rate). The principal reason for nonresponse among both eligible men and women was the failure to find them at home despite repeated visits to the households. The lower response rate among men than among women was due to the more frequent and longer absences of men from the households.

Note: See summarized response rates in Table 1.3 of the Final Report.

Questionnaires

Overview

Three questionnaires were used for the 2005-06 ZDHS: a Household Questionnaire, a Women's Questionnaire, and a Men's Questionnaire. These questionnaires were adapted to reflect the population and health issues relevant to Zimbabwe at a series of meetings with various stakeholders from government ministries and agencies, nongovernmental organizations, and international donors. Three language versions of the questionnaires were produced: Shona, Ndebele, and English.

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 who have died. The Household Questionnaire was also 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. The Household Questionnaire was also used to record height, weight, and haemoglobin measurements for children age 6-59 months.

The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following 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 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
- Domestic violence
- Awareness and behaviour regarding AIDS and other sexually transmitted infections (STIs)
- Adult mortality including maternal mortality.

As in the 1999 ZDHS, a "calendar" was used in the 2005-06 ZDHS to collect information on the respondent's reproductive history since January 2000 concerning contraceptive method use, sources of contraception, reasons for contraceptive discontinuation, and marital unions. In addition, interviewing teams measured the height and weight of all children under the age of five years and of all women age 15-49.

The Men's Questionnaire was administered to all men age 15-54 in each household in the 2005-06 ZDHS 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
2005-08	2006-02	N/A

Data Collection Mode

Face-to-face [f2f]F

DATA COLLECTION NOTES

CSO staff and a variety of experts from government ministries, nongovernmental organizations (NGOs), and donor organizations participated in a three-day training of trainers (TOT) conducted in April 2005. Immediately following the TOT, the pretest training and fieldwork took place in April and May 2005. The pretest fieldwork was conducted in Gweru and surrounding areas, where both Shona and Ndebele households could easily be identified. For two weeks, 16 qualified nurses and Advanced-Level graduates were trained to administer the questionnaires, take anthropometric measurements, and collect blood samples for anaemia and HIV testing. Representatives from the NMRL and CDC/Zimbabwe assisted in training participants on the finger prick for blood collection, and proper handling and storage of the DBS samples for HIV testing. The pretest fieldwork was conducted in two separate six-day phases, covering approximately 200 households. Debriefing sessions were held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise. Pretest interviewers were retained to serve as field editors and team supervisors during the main survey.

Training of field staff for the main survey was conducted during a four-week period in July 2005. Permanent CSO staff, as well as staff of MOH&CW, ZNFPC, the Musasa Project, and Macro International Inc. trained 130 interviewer trainees, most of whom were trained nurses or Advanced-Level graduates. 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, collecting blood samples for anaemia and HIV testing, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the 2005-06 ZDHS sample points. Trainees who performed satisfactorily in the training programme were selected as interviewers, while the remainder were retained to assist in office operations. During this period, field editors and team supervisors were provided with additional training in methods of field editing, data quality control procedures, and fieldwork coordination.

Fourteen interviewing teams carried out the fieldwork for the 2005-06 ZDHS. Each team consisted of one team supervisor, one field editor, three or four female interviewers, two or three male interviewers, and one driver. In total, there were 14 team supervisors, 14 field editors, 44 female interviewers, 43 male interviewers, 24 data capture clerks, and 14 drivers. Nine permanent senior CSO staff coordinated and supervised fieldwork activities. Data collection took place over a seven-month period, from August 2005 to February 2006.

Data Processing

Other Processing

All questionnaires for the 2005-06 ZDHS were returned to the CSO for data processing, which consisted of office editing, coding of open-ended questions, data entry, and secondary editing of computer-identified errors. The secondary editing involved checking and, if necessary, resolving inconsistencies in the data identified by the editing program. The data were processed in two shifts by a team of 24 data entry clerks, 2 data editors, 2 data entry supervisors, and administrators to receive and check the blood samples from the field. Data entry and editing was accomplished using the software package CPro.

Fourteen microcomputers were used for data processing. These were networked via a local area network connection to allow greater control by supervisors over the data entry process and to increase the security of the data. This also facilitated updating data entry software from a single location without interrupting data entry, and the ability to perform automatic daily backups of the data files. Twelve computers were used for data entry, while the other two computers were reserved for supervisory duties. Supervisor computers were used for the allocation of batches to operators, secondary editing, and scanning of DBS barcodes.

Data processing commenced in September 2005 and, after data collection was completed in February 2006, a second shift comprising 12 operators and 2 supervisors (drawn from field interviewers/editors with computer experience) was introduced to speed up data entry. There was 100 percent verification (re-entry) of all questionnaires so as to maximize the quality of the data and to reduce the secondary editing process. Secondary editing was completed in March 2006. The final data cleaning was performed for two weeks in May 2006, after which the tables for preliminary results were generated from the imputed raw data.

Data Appraisal

Estimates of Sampling Error

The estimates 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 2005-06 Zimbabwe Demographic and Health Survey (ZDHS) 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 2005-06 DHS 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 2005-06 ZDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2005-06 DHS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. 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 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
- Reporting of age at death in days
- Reporting of age at death in months
- Births by calendar years

Note: See these tables in APPENDIX C of the Final Report.

Related Materials

Questionnaires

Demographic and Health Survey 2005-2006: Questionnaire

Title Demographic and Health Survey 2005-2006: Questionnaire
Author(s) Central Statistical Office Macro International Inc.
Date 2005-01-01
Country Zimbabwe
Language English
Filename Zimbabwe_DHS_2005_questionnaire.pdf

Reports

Demographic and Health Survey 2005-2006: Final Report

Title Demographic and Health Survey 2005-2006: Final Report
Author(s) Central Statistical Office and Macro International Inc.
Date 2007-03-01
Country Zimbabwe
Language English
Filename <http://www.dhsprogram.com/pubs/pdf/FR186/FR186.pdf>

Demographic and Health Survey 2005-2006: ERRATE

Title Demographic and Health Survey 2005-2006: ERRATE
Author(s) Central Statistical Office and Macro International Inc.
Date 2007-03-01
Country Zimbabwe
Language English
Filename <http://www.dhsprogram.com/pubs/pdf/FR186/Zimbabwe-Errata.pdf>

Demographic and Health Survey 2005-2006: Fact Sheet

Title Demographic and Health Survey 2005-2006: Fact Sheet
Date 2007-02-01
Country Zimbabwe
Language English
Filename <http://www.dhsprogram.com/pubs/pdf/HF19/HF19.pdf>
