Egypt, Arab Rep. - Demographic and Health Survey 2008

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Sampling

Sampling Procedure

The primary objective of the sample design for the 2008 EDHS was to provide estimates of key population and health indicators including fertility and child mortality rates for the country as a whole and for six major administrative regions (Urban Governorates, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Upper Egypt, and the Frontier Governorates). In the Urban Governorates, Lower Egypt, and Upper Egypt, the 2008 EDHS design allowed for governorate-level estimates of most of the key variables, with the exception of the fertility and mortality rates. In the Frontier Governorates, the sample size was not sufficiently large to provide separate estimates for the individual governorates. To meet the survey objectives, the number of households selected in the 2008 EDHS sample from each governorate was not proportional to the size of the population in the governorate. As a result, the 2008 EDHS sample is not self-weighting at the national level, and weights have to be applied to the data to obtain the national-level estimates.

The sample for the 2008 EDHS was selected in three stages. The first stage included selecting the primary sampling units. The units of selection were shiakhas/towns in urban areas and villages in rural areas. A list of these units which was based on the 2006 census was obtained from CAPMAS, and this list was used in selecting the primary sampling units (PSUs). Prior to the selection of the PSUs, the frame was further reviewed to identify any administrative changes that had occurred after the 2006 Census. The updating process included both office work and field visits for a period of around 2 months. After it was completed, urban and rural units were separately stratified by geographical location in a serpentine order from the northwest corner to the southeast corner within each governorate. During this process, shiakhas or villages with a population less than 2,500 were grouped with contiguous shiakhas or villages (usually within the same kism or marquez) to form units with a population of at least 5,000. After the frame was ordered, a total of 610 primary sampling units (275 shiakhas/towns and 335 villages) were selected.

The second stage of selection involved several steps. First, detailed maps of the PSUs chosen during the first stage were obtained and divided into parts of roughly equal population size (about 5,000). In shiakhas/towns or villages with a population of 100,000 or more, three parts were selected, two parts were selected from PSU's with population 20,000 or more (and less than 100,000). In the remaining smaller shiakhas/towns or villages, only one part was selected. Overall, a total of 998 parts were selected from the shiakhas/towns and villages in the 2008 EDHS sample.

A quick count was then carried out to provide an estimate of the number of households in each part. This information was needed to divide each part into standard segments of about 200 households. A group of 48 experienced field workers participated in the quick count operation. They were organized into 15 teams, each consisting of 1 supervisor, 1 cartographer and 1 counter. A one-week training course conducted prior to the quick count included both classroom sessions and two field practices in a shiakha/town and a village not covered in the survey. The quick-count operation took place between the end of October 2007 and end of December 2007.

As a quality control measure, the quick count was repeated in 10 percent of the parts. If the difference between the results of the first and second quick count was less than 2 percent, then the first count was accepted. No major discrepancies were found between the two counts in most of the areas for which the count was repeated.

After the quick count, a total of 1,267 segments were chosen from the parts in each shiakha/ town and village in the 2008 EDHS sample (i.e., two segments were selected from 561 PSUs and three segments from 48 PSUs and one segment from one PSU). A household listing operation was then implemented in each of the selected segments. To conduct this operation, 14 supervisors and 28 listers were organized into 14 teams. Generally, each listing team consisted of a supervisor and two listers. A one-week training course for the listing staff was held at the beginning of January 2008. The training involved classroom lectures and two days of field practice in three urban and rural locations not covered in the survey. The listing operation took place during a six-week period, beginning immediately after the training.

About 10 percent of the segments were relisted. Two criteria were used to select segments for relisting. First, segments were relisted when the number of households in the listing differed markedly from that expected according to the quick count information. Second, a number of segments were randomly selected to be relisted as an additional quality control test. Overall, the discrepancies found in comparisons of the listings were not major.

The third stage involved selecting the household sample. Using the household listing for each segment, a systematic random sample of households was selected for the 2008 EDHS sample. All evermarried women 15-49 who were present in the sampled households on the night before the survey team visited were eligible for the main DHS interview. In addition, in a subsample of one-quarter of the households in each segment, all women and men age 15-59 who were present in the household on the night before the interview were eligible for the health issues interviews and the hepatitis C testing.

Note: See detailed description of the sample design in Appendix B of the survey report.

Response Rate

Out of 19,739 households selected for the 2008 EDHS 19,147 households were found, and 18,968 households were successfully interviewed which represents a response rate of 99.1 percent.

As noted above, for the ever-married woman interviews, an eligible respondent was defined as an ever-married woman age 15-49 who was present in the household on the night before the interview. A total of 16,571 eligible ever-married women were identified in the households in the 2008 EDHS sample. Of these women, 16,527 were successfully interviewed. The ever-married women response rate was 99.7 percent.

A total of 4,953 households were selected for the health issues subsample. Of these, 4,757 were found and 4,662 interviewed. The household response rate in the health issues subsample was only slightly lower than the response rate in the entire EDHS sample (98 percent).

Women and men were eligible for the health issues interview if they were age 15-59 years (regardless of marital status) and were present in the household on the night before the interview. A total of 12,780 individuals (6,702 women and 6,078 men) who met these criteria were identified in the subsample of households selected for the special health issues interviews, of which 12,008 were successfully interviewed. Taking into account both eligible women and men, the response rate for the health issues was 94 percent. As expected, the response rate among women (98 percent) was higher than the rate among men (89 percent), with the principal reason being the fact that men were more likely to be working and, thus, not as easy to contact for interview as women.

Note: See summarized response rates in Table 1.4 of the report which is presented in this documentation.

Questionnaires

Overview

Three questionnaires were used in the 2008 EDHS: a household questionnaire, an ever-married woman questionnaire, and a health issues questionnaire. The household and ever-married woman's questionnaires were based on the questionnaires that had been used in earlier EDHS surveys and on model survey instruments developed in the MEASURE DHS program. The majority of the content of the health issues questionnaire was developed especially for the 2008 EDHS although some sections (e.g., the questions on female circumcision and HIV/AIDS knowledge and attitudes) were also based on questionnaires used in earlier EDHS surveys or were drawn from the model instruments from the MEASURE DHS program. The questionnaires were developed in English and translated into Arabic.

The first part of the household questionnaire was used to enumerate all usual members and visitors to the selected households and to collect information on the age, sex, marital status, educational attainment, and relationship to the household head of each household member or visitor. This information provided basic demographic data for Egyptian households. It was also used to identify the women who were eligible for the individual interview (i.e., ever-married women 15-49) as well as individuals eligible for the special health issues interviews and the hepatitis testing subsample. In the second part of the household questionnaire, there were questions relating to the socioeconomic status of the household including questions on housing characteristics (e.g., the number of rooms, the flooring material, the source of water and the type of toilet facilities) and on ownership of a variety of consumer goods. A special module was included in the household questionnaire on ownership of poultry and birds. In addition, height and weight measurements of respondents, youth, and children under age six were taken during the survey and recorded in the household questionnaire. The informed consent for the hepatitis C testing obtained from eligible respondents age 15-59 was also recorded in the household questionnaire.

The woman's questionnaire was administered to all ever-married women age 15-49 who were usual residents or who were present in the household during the night before the interviewer's visit. It obtained information on the following topics:
• Respondent's background
• Reproduction
• Contraceptive knowledge and use
• Fertility preferences and attitudes about family planning
• Pregnancy and breastfeeding
• Immunization and child health
• Husband's background and women's work
• Female circumcision
• Health care access and other health concerns
• Mother and child nutrition.

The woman's questionnaire included a monthly calendar, which was used to record the history of the respondent's marriage status, fertility, contraceptive use including the source where the method was obtained, and the reason for discontinuation for each segment of use status during each month of an approximately five-year period starting from January 2003.

The health issues questionnaire collected information on the following topics:
• Background characteristics of men age 15-59, never-married women age 15-59, and evermarried women age 50-59
• Female circumcision
• Health insurance coverage and health care cost
• Knowledge and attitudes about HIV/AIDS
• Medical procedures and safe injections
• Hepatitis C
• Hypertension, heart disease and diabetes
• Avian influenza
• Smoking

Blood pressure readings were also obtained for respondents at three points during the health issues interview.

Data Collection

Data Collection Dates

Start	End	Cycle
2008-03	2008-06	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

Data Collection Activities

Staff recruitment: To recruit interviewers and field editors, a list was obtained from the Ministry of Social Solidarity (MOSS) of female personnel who were working to fulfill the one-year period of governmental public service that is mandatory for university graduates. All candidates nominated by MOSS for the field staff positions were interviewed, and only those who were qualified were accepted into the training program.

All candidates for the interviewer and field editor positions were recent university graduates. Another basic qualification was a willingness to work in any of the governorates covered in the survey. With a few exceptions, interviewers who had previous experience in surveys were not accepted into the training program. This decision was made to reduce any bias that might result from previous survey experience and to ensure that all trainees had a similar background. However, previous survey experience was a basic qualification for the candidates for the positions of supervisor. The Hepatitis C testing teams were composed of physicians, laboratory technician, and nurses. Some candidates for the hepatitis C testing teams were assigned by the MOH, and others were recruited from among newly graduated physicians and private laboratories.

Training materials: A variety of materials were developed for use in training personnel involved in the fieldwork. A lengthy interviewer's manual, including general guidelines for conducting an interview as well as specific instructions for asking each of the questions in the EDHS questionnaires, was prepared and given to all field staff. In addition, a chart for converting months from the Islamic calendar to the Gregorian calendar was designed for the 60 months before the 2008 EDHS and distributed to all field staff along with a calendar of well-known worldwide or local events. Other training materials, including special manuals describing the duties of the team supervisor and the rules for field editing, were prepared.

Instructions for anthropometric data collection were included in a manual for the staff trained to collect height and weight data. Special manuals covering the procedures to be followed in the hepatitis C blood testing and the blood pressure measurement were also prepared.

Training for supervisors and interviewers: A special training program for supervisors was conducted during a one-day period prior to the main fieldwork training. This training focused specifically on the supervisor's duties, but it also covered the 2008 EDHS questionnaires in order to give supervisors a basic understanding of the content of the survey prior to the main training program. Training for interviewers for the 2008 EDHS data collection began on the 9th of February 2008. Fourteen supervisors, 87 interviewers, and 52 Health Personnel for Hepatitis C-testing and the staff responsible for the anthropometric data collection staff (14 doctors, 28 technicians, and 10 nurses) participated in the training program.

The five-week training program, which was held in Cairo, included the following:
• Lectures related to basic interview techniques and to specific survey topics (e.g., fertility and family planning, maternal and child health, and female circumcision)
• Sessions on how to fill out the questionnaire, using visual aids
• Training on blood pressure measurement
• Role playing and mock interviews
• Five days of field practice in areas not covered in the survey
• Four quizzes.

Trainees who failed to show interest in the survey, who did not attend the training program on a regular basis, or who failed the first two quizzes were terminated immediately.

Before the fourth field practice, a list was prepared of the 20 trainees who had performed best during both the classroom and field practices. Following the fourth field practice, 14 of these trainees were chosen to be field editors. A special training session was held for the field editors after their selection. By the end of the training course, 69 of the 87 candidates originally recruited for interviewer training had been selected to work as interviewers or field editors in the EDHS fieldwork.

Training for staff responsible for the anthropometric measurements and hepatitis C testing: All health personnel (total 52) attended the training for anthropometric data collection and hepatitis C testing. The training was held in parallel to the main training for around four weeks. The supervisors attended most of the morning sessions to be aware of all procedures of Hepatitis C testing. The training included both classroom lectures and practice measurement and venues blood drawn procedure, and practice in households. At the end of the program, the 42 most-qualified trainees (27 males and 15 females) were selected for the anthropometric data collection and Hepatitis C testing.

Fieldwork

Fieldwork for the 2008 EDHS began on March 15th , 2008 and was completed in late May 2008. The field staff was divided into 14 teams; each team had 1 supervisor, 1 field editor, 4 interviewers (one male), and 3 health staff members assigned to height and weight measurement and Hepatitis C testing (one at least has to be female). During the fieldwork, the 14 field teams worked in separate governorates; the number of governorates assigned to an individual team varied from two to three, according to the sample size in the governorates. The teams were closely supervised throughout the fieldwork by a fieldwork coordinator, two assistant fieldwork coordinators, and other senior staff. Due to the fact that the blood samples had to be drawn and transferred to the central lab in Cairo, thirteen teams were assigned to work first in Upper Egypt governorates in order to complete the data collection before the weather became excessively hot.

As soon as the main data collection was completed in the first group of governorates, a random sample of up to 10 percent of the households was selected for reinterview as a quality control measure. Shorter versions of the 2008 EDHS questionnaires were prepared and used for the reinterviews. The visits to PSUs to conduct reinterviews also afforded an opportunity to make callbacks to complete interviews with households or individuals who were not available at the time of the original visit by the 2008 EDHS interviewers. Household or individual questionnaires in which there were significant errors that could not be corrected in the office were also assigned for callbacks. Special teams were organized to handle callbacks and reinterviews. During this phase of the survey, interviewers were not allowed to work in the governorate in which they had worked in the initial fieldwork. Callbacks and reinterviews began in late May 2008 and took about one months to complete.

Data Processing

Data Editing

Office editing: Staff from the central office were responsible for collecting questionnaires from the teams as soon as interviewing in a cluster was completed. Office editors reviewed questionnaires for consistency and completeness, and a few questions (e.g., occupation) were coded in the office prior to data entry. To provide feedback for the field teams, the office editors were instructed to report any problems detected while editing the questionnaires, which were reviewed by the senior staff. If serious errors were found in one or more questionnaires from a cluster, the supervisor of the team working in that cluster was notified and advised of the steps to be taken to avoid these problems in the future.

Machine entry and editing: Machine entry and editing began while interviewing teams were still in the field. The data from the questionnaires were entered and edited on microcomputers using the Census and Survey Processing System (CSPro), a software package for entering, editing, tabulating, and disseminating data from censuses and surveys. In addition the transmittal forms for Hepatitis C individuals as well as the blood sample sheet including the bar code were entered by one person.

Special computer programs were also set up to facilitate the tracking of the results of the testing of the blood samples collected during the survey at the Central Health Laboratory. The bar codes attached to the samples in the field were used for logging in and identifying the samples throughout the processing, which took place at three separate locations within the Central Laboratory. The bar code also served as the means to link the laboratory test results and the survey data file.

Twelve data entry personnel used twelve microcomputers to process the 2008 EDHS survey data. During the machine entry, 100 percent of each segment was re-entered for verification. The data processing staff completed the entry and editing of data by mid July 2008.

Data Appraisal

Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as the 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 Egypt DHS to minimize this type of error, nonsampling 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 EDHS 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.

If the sample of EDHS 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 EDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae, specifically the Taylor linearization method of variance estimation, to calculate sampling errors for means or proportions from the survey. The Jacknife 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 C of the survey report.

Other forms of Data Appraisal

Data Quality Tables
- Household age distribution
- Age distribution of eligible and interviewed women
- 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 D 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)	Fatma El-Zanaty and Ann Way Macro International Inc.
Date	2008-01-01
Country	Egypt
Language	English
Filename	Egypt_DHS_2008_questionnaire.pdf

Reports

2008 Demographic and Health Survey - Report

Title	2008 Demographic and Health Survey - Report
Author(s)	Fatma El-Zanaty and Ann Way Macro International Inc.
Date	2009-03-01
Country	Egypt
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/FR220/FR220.pdf